PREVIEW CLOSE

Quiz: Letter and Number Patterns

Question 1a of 12 (3 Letter and Number Sequences 162001)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: Which of the letters below is the next letter in the pattern?

q, t, w, z, _____

	Choice	Feedback
A.	The letter a	
B.	The letter b	
***C.**	The letter c	
D.	The letter d	
E.	The letter e	

Global Incorrect Feedback
The correct answer is: The letter c.

Question 1b of 12 (3 Letter and Number Sequences 303490)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: Which of the letters below is the next letter in the pattern?

p, s, v, y, _____

	Choice	Feedback
A.	The letter a	
***B.**	The letter b	
C.	The letter c	
D.	The letter d	
E.	The letter e	

Global Incorrect Feedback
The correct answer is: The letter b.

Question 1c of 12 (3 Letter and Number Sequences 303491)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: Which of the letters below is the next letter in the pattern?

r, u, x, a, _____

	Choice	Feedback
A.	The letter a	
B.	The letter b	
C.	The letter c	
***D.**	The letter d	
E.	The letter e	

Global Incorrect Feedback
The correct answer is: The letter d.

Question 2a of 12 (3 Letter and Number Sequences 163906)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: Which is most likely to be the next letter in this sequence?

M, T, W, T, F, _____

	Choice	Feedback
***A.**	The letter S	
B.	The letter M	
C.	The letter W	
D.	The letter R	
E.	The letter F	

Global Incorrect Feedback
The correct answer is: The letter S.

Question 2b of 12 (3 Letter and Number Sequences 303492)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2

Question: Which is most likely to be the next letter in this sequence?

M, T, W, T, F, S, _____

	Choice	Feedback
*A.	The letter S	
B.	The letter M	
C.	The letter W	
D.	The letter R	
E.	The letter F	

Global Incorrect Feedback
The correct answer is: The letter S.

Question 2c of 12 (3 Letter and Number Sequences 303493)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: Which is most likely to be the next letter in this sequence?

W, T, F, S, S, M, _____

	Choice	Feedback
A.	The letter S	
B.	The letter M	
C.	The letter W	
*D.	The letter T	
E.	The letter F	

Global Incorrect Feedback
The correct answer is: The letter T.

Question 3a of 12 (3 Letter and Number Sequences 162004)

Maximum Attempts: 1
Question Type: Text Fill In Blank
Maximum Score: 2
Is Case Sensitive: false
Correct Answer: pp, p-p
Question: Find the pattern in the following letters, and enter the missing pair of letters. Jotting down the English alphabet and circling letters will help you with this problem.

bt ds, gr, kq, _____

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: pp.

Question 3b of 12 (3 Letter and Number Sequences 303494)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 2

Is Case Sensitive: false

Correct Answer: qp, q-p

Question: Find the pattern in the following letters, and enter the missing pair of letters. Jotting down the English alphabet and circling letters will help you with this problem.

ct, es, hr, lq, _____

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: qp.

Question 3c of 12 (3 Letter and Number Sequences 303495)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 2

Is Case Sensitive: false

Correct Answer: op, o-p

Question: Find the pattern in the following letters, and enter the missing pair of letters. Jotting down the English alphabet and circling letters will help you with this problem.

at, cs, fr, jq, _____

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: op.

Question 4a of 12 (3 Letter and Number Sequences 162005)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 2

Is Case Sensitive: false

Correct Answer: lps, l-p-s

Question: Find the pattern in the following letters, and enter the missing triplet of letters. Jotting down the English alphabet and circling letters will help you with this problem.

dnw fnv, hou, jot, _____

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: lps.

Question 4b of 12 (3 Letter and Number Sequences 303496)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 2

Is Case Sensitive: false

Correct Answer: lpr, l-p-r

Question: Find the pattern in the following letters, and enter the missing triplet of letters. Jotting down the English alphabet and circling letters will help you with this problem.

dnv, fnu, hot, jos, _____

Attempt	Incorrect Feedback

1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: lpr.

Question 4c of 12 (3 Letter and Number Sequences 303497)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 2

Is Case Sensitive: false

Correct Answer: kps, k-p-s

Question: Find the pattern in the following letters, and enter the missing triplet of letters. Jotting down the English alphabet and circling letters will help you with this problem.

cnw env, gou, iot, _____

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: kps.

Question 5a of 12 (3 Letter and Number Sequences 162006)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which of the numbers below is the next number in the pattern?

1, -2, 3, -4, _____

	Choice	Feedback
A.	4	
B.	-3	
***C.**	5	
D.	3	

E.	-5	

Global Incorrect Feedback
The correct answer is: 5.

Question 5b of 12 (3 Letter and Number Sequences 303498)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: Which of the numbers below is the next number in the pattern?

-1, 2, -3, 4, _____

	Choice	Feedback
A.	4	
B.	-3	
C.	-3	
D.	5	
***E.**	-5	

Global Incorrect Feedback
The correct answer is: -5.

Question 5c of 12 (3 Letter and Number Sequences 303499)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: Which of the numbers below is the next number in the pattern?

2, -3, 4, -5, _____

	Choice	Feedback
A.	-6	
***B.**	6	
C.	-5	
D.	3	
E.	4	

Global Incorrect Feedback
The correct answer is: 6.

Question 6a of 12 (3 Letter and Number Sequences 302462)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 61

Question: Find the pattern in the following numbers, and enter the next number in the pattern.

13, 25, 37, 49, _____

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 61.

Question 6b of 12 (3 Letter and Number Sequences 303500)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 63

Question: Find the pattern in the following numbers, and enter the next number in the pattern.

15, 27, 39, 51, _____

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 63.

Question 6c of 12 (3 Letter and Number Sequences 303501)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 62

Question: Find the pattern in the following numbers, and enter the next number in the pattern.

14, 26, 38, 50, _____

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 62.

Question 7a of 12 (3 Letter and Number Sequences 302463)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 243

Question: Find the pattern in the following numbers, and enter the next number in the pattern.

1, 3, 9, 27, 81, _____

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 243.

Question 7b of 12 (3 Letter and Number Sequences 303502)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 1024

Question: Find the pattern in the following numbers, and enter the next number in the pattern.

1, 4, 16, 64, 256, _____

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 1,024.

Question 7c of 12 (3 Letter and Number Sequences 303503)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 3125

Question: Find the pattern in the following numbers, and enter the next number in the pattern.

1, 5, 25, 125, 625, _____

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 3,125.

Question 8a of 12 (3 Letter and Number Sequences 302464)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 216

Question: Find the pattern in the following numbers, and enter the next number in the pattern.

1, 8, 27, 64, 125, _____

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 216.

Question 8b of 12 (3 Letter and Number Sequences 303504)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 1296

Question: Find the pattern in the following numbers, and enter the next number in the pattern.

1, 16, 81, 256, 625, _____

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 1,296.

Question 8c of 12 (3 Letter and Number Sequences 303505)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 7776

Question: Find the pattern in the following numbers, and enter the next number in the pattern.

1, 32, 243, 1,024, 3,125, _____

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 7,776.

Question 9a of 12 (3 Letter and Number Sequences 302465)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 193

Question: Find the pattern in the following numbers, and enter the next number in the pattern. Each number depends on the three that come before it.

1, 1, 1, 3, 5, 9, 17, 31, 57, 105, _____

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 193.

Question 9b of 12 (3 Letter and Number Sequences 303506)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 274

Question: Find the pattern in the following numbers, and enter the next number in the pattern. Each number depends on the three that come before it.

1, 1, 2, 4, 7, 13, 24, 44, 81, 149, _____

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 274.

Question 9c of 12 (3 Letter and Number Sequences 303507)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 196

Question: Find the pattern in the following numbers, and enter the next number in the pattern. Each number depends on the four that come before it.

1, 1, 1, 1, 4, 8, 14, 27, 53, 102, _____

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 196.

Question 10a of 12 (3 Letter and Number Sequences 162012)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Srinivasa Ramanujan, the great East Indian mathematician, was invited to Cambridge University in England in 1914 by the English mathematician G. H. Hardy. One day Ramanujan was ill in the hospital, and Hardy came to visit him. Hardy remarked that he had come in taxicab #1729, and said that he thought that this was an entirely uninteresting number. Ramanujan instantly replied, "Oh no! 1,729 is the smallest number that can be written as the sum of two cubes in two different ways."

The table below shows two patterns of numbers. The pattern in the top row represents the counting numbers. The pattern in the second row consists of the cubes of the counting numbers.

Which two pairs of numbers have cubes that add up to 1,729? Because there are two pairs of numbers to find, you should select a total of four numbers from the list below.

1	2	3	4	5	6	7	8	9	10	11	12
1	8	27	64	125	216	343	512	729	1000	1331	1728

Correct Answers:

	Choice
***A.**	1
B.	2
C.	3
D.	4
E.	5

F.	6
G.	7
H.	8
***I.**	9
***J.**	10
K.	11
***L.**	12

Attempt	**Incorrect Feedback**
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: 1, 9, 10, and 12.

Question 10b of 12 (3 Letter and Number Sequences 303508)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question:

Srinivasa Ramanujan, the great East Indian mathematician, was invited to Cambridge University in England in 1914 by the English mathematician G. H. Hardy. One day Ramanujan was ill in the hospital, and Hardy came to visit him. Hardy remarked that he had come in taxicab #1729, and said that he thought that this was an entirely uninteresting number. Ramanujan instantly replied, "Oh no! 1,729 is the smallest number that can be written as the sum of two cubes in two different ways."

The table below shows two patterns of numbers. The pattern in the top row represents the counting numbers. The pattern in the second row consists of the cubes of the counting numbers.

Which two pairs of numbers have cubes that add up to 1,729? Because there are two pairs of numbers to find, you should select a total of four numbers from the list below.

1	2	3	4	5	6	7	8	9	10	11	12
1	8	27	64	125	216	343	512	729	1000	1331	1728

Correct Answers:

	Choice
***A.**	1

B.	2
C.	3
D.	4
E.	5
F.	6
G.	7
H.	8
***I.**	9
***J.**	10
K.	11
***L.**	12

Attempt	**Incorrect Feedback**
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: 1, 9, 10, and 12.

Question 10c of 12 (3 Letter and Number Sequences 303509)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question:

Srinivasa Ramanujan, the great East Indian mathematician, was invited to Cambridge University in England in 1914 by the English mathematician G. H. Hardy. One day Ramanujan was ill in the hospital, and Hardy came to visit him. Hardy remarked that he had come in taxicab #1729, and said that he thought that this was an entirely uninteresting number. Ramanujan instantly replied, "Oh no! 1,729 is the smallest number that can be written as the sum of two cubes in two different ways."

The table below shows two patterns of numbers. The pattern in the top row represents the counting numbers. The pattern in the second row consists of the cubes of the counting numbers.

Which two pairs of numbers have cubes that add up to 1,729? Because there are two pairs of numbers to find, you should select a total of four numbers from the list below.

1	2	3	4	5	6	7	8	9	10	11	12
1	8	27	64	125	216	343	512	729	1000	1331	1728

Correct Answers:

	Choice
*A.	1
B.	2
C.	3
D.	4
E.	5
F.	6
G.	7
H.	8
*I.	9
*J.	10
K.	11
*L.	12

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: 1, 9, 10, and 12.

Question 11a of 12 (3 Letter and Number Sequences 162015)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following methods can be used to construct a pattern of 10 numbers for which it would be mathematically impossible to predict the 11th term?

Check all that apply.

Correct Answers:

	Choice
A.	Make a pattern, starting with 3, where each number is the next digit of pi (3.14159 . . .)

*B.	Make a pattern by drawing numbered ping-pong balls at random from a box
C.	Make a pattern by counting the number of letters in each word of Lincoln's Gettysburg Address, starting with the first word
D.	Make a pattern where each number is the square of the number before it, plus 7 times the cube of the number before that
*E.	Make a pattern by asking each 10 friends what their favorite number is

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: Make a pattern by drawing numbered ping-pong balls at random from a box, and Make a pattern by asking each 10 friends what their favorite number is.

Question 11b of 12 (3 Letter and Number Sequences 303510)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following methods can be used to construct a pattern of 10 numbers for which it would be mathematically impossible to predict the 11th term?

Check all that apply.

Correct Answers:

	Choice
*A.	Make a pattern from winning lottery tickets
B.	Make a pattern, starting with 2, where each number is the next digit of *e* (2.71828 . . .)

C.	Make a pattern by counting the number of letters in each word of Lincoln's Gettysburg Address, starting with the first word
***D.**	Make a pattern by asking each of 10 friends what their favorite number is
E.	Make a pattern where each number is the square of the number before it, plus 7 times the cube of the number before that

Attempt	**Incorrect Feedback**
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: Make a pattern from winning lottery tickets, and Make a pattern by asking each of 10 friends what their favorite number is.

Question 11c of 12 (3 Letter and Number Sequences 303511)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following methods can be used to construct a pattern of 10 numbers for which it would be mathematically impossible to predict the 11th term?

Check all that apply.

Correct Answers:

	Choice
A.	Make a pattern by counting the number of letters in each word of Lincoln's Gettysburg Address, starting with the first word
***B.**	Make a pattern by asking each 10 friends what their favorite number is

*C.	Make a pattern based upon values assigned to the current weather
D.	Make a pattern where each number is the square of the number before it, plus 7 times the cube of the number before that
E.	Make a pattern, starting with 3, where each number is the next digit of pi (3.14159 . . .)

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: Make a pattern by asking each 10 friends what their favorite number is, and Make a pattern based upon values assigned to the current weather.

Question 12a of 12 (3 Letter and Number Sequences 302466)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 63

Question: Find the pattern in the following numbers, and enter the next number in the pattern.

1, 3, 7, 15, 31, _____

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 63.

Question 12b of 12 (3 Letter and Number Sequences 303512)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 364

Question: Find the pattern in the following numbers, and enter the next number in the pattern.

1, 4, 13, 40, 121, _____

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 364.

Question 12c of 12 (3 Letter and Number Sequences 303513)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 63

Question: Find the pattern in the following numbers, and enter the next number in the pattern.

1, 3, 7, 15, 31, _____

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 63.

PREVIEW CLOSE

Quiz: Finding Patterns

Question 1a of 14 (2 Intro to Sequences 161970)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: Which of the following is *not* an example of a pattern that repeats itself?

	Choice	Feedback
A.	The phases of the moon	
B.	The changing of the seasons	
C.	The rising and falling of the tides	
***D.**	A person's age	

Global Incorrect Feedback
The correct answer is: A person's age.

Question 1b of 14 (2 Intro to Sequences 303433)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: Which of the following is an example of a pattern that repeats itself?

	Choice	Feedback
***A.**	The phases of the moon	
B.	How well your favorite sports team performs	
C.	The type of weather from day to day	
D.	A person's age	

Global Incorrect Feedback
The correct answer is: The phases of the moon.

Question 1c of 14 (2 Intro to Sequences 303434)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: Which of the following is *not* an example of a pattern that repeats

itself?

	Choice	Feedback
A.	The day of the week the garbage is collected	
*B.	The wins and losses of a sports team	
C.	The rising and falling of the tides	
D.	The changing of the seasons	

Global Incorrect Feedback
The correct answer is: The wins and losses of a sports team.

Question 2a of 14 (3 Intro to Sequences 161872)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: What is the next picture in this pattern?

	Choice	Feedback
A.		
B.		
*C.		

D.		
E.		

Global Incorrect Feedback
The correct answer is:

Question 2b of 14 (3 Intro to Sequences 329684)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: What is the missing picture in this pattern?

	Choice	**Feedback**
***A.**		
B.		

C.		
D.		
E.		

Global Incorrect Feedback
The correct answer is:

Question 2c of 14 (3 Intro to Sequences 303436)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: What is the missing picture in this pattern?

	Choice	**Feedback**
A.		

*B.		
C.		
D.		
E.		

Global Incorrect Feedback
The correct answer is:

Question 3a of 14 (3 Intro to Sequences 161885)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: What is the missing shape in this pattern?

	Choice	Feedback
A.		

*B.		
C.		
D.		
E.		

Global Incorrect Feedback
The correct answer is:

Question 3b of 14 (3 Intro to Sequences 303437)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: What is the missing shape in this pattern?

	Choice	Feedback
A.		
B.		

C.		
*D.		
E.		

Global Incorrect Feedback
The correct answer is:

Question 3c of 14 (3 Intro to Sequences 303438)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: What is the missing shape in this pattern?

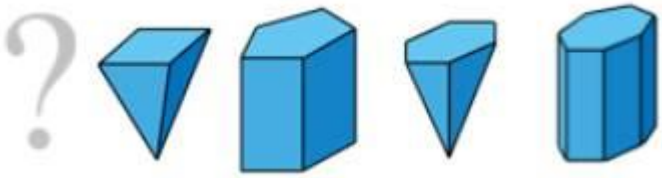
	Choice	Feedback
*A.		
B.		
C.		

D.		
E.		

Global Incorrect Feedback
The correct answer is:

Question 4a of 14 (3 Intro to Sequences 161893)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: What is the missing shape in this pattern?



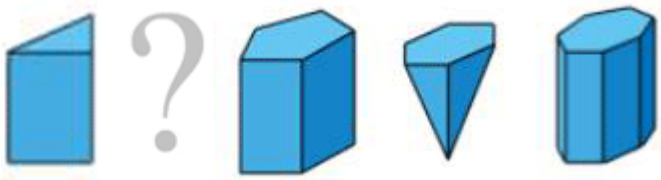
	Choice	**Feedback**
***A.**		
B.		
C.		
D.		

E.		

Global Incorrect Feedback
The correct answer is:

Question 4b of 14 (3 Intro to Sequences 329686)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: What is the missing shape in this pattern?



	Choice	**Feedback**
A.		
B.		
***C.**		
D.		

E.		

Global Incorrect Feedback
The correct answer is:

Question 4c of 14 (3 Intro to Sequences 303440)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: What is the missing shape in this pattern?

	Choice	Feedback
A.		
B.		
C.		
***D.**		

E.		

Global Incorrect Feedback
The correct answer is:

Question 5a of 14 (3 Intro to Sequences 161988)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: What is the missing word in this colored word pattern?

red, blue, green, red, _____, green, red

	Choice	Feedback
A.	green	
B.	blue	
C.	red	
***D.**	blue	
E.	green	

Global Incorrect Feedback
The correct answer is: blue.

Question 5b of 14 (3 Intro to Sequences 303441)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: What is the missing word in this colored word pattern?

red, blue, green, red, blue, _____, red

	Choice	Feedback
A.	green	
B.	blue	

C.	red	
D.	blue	
***E.**	green	

Global Incorrect Feedback
The correct answer is: green.

Question 5c of 14 (3 Intro to Sequences 303442)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: What is the missing word in this colored word pattern?

red, blue, green, _____, blue, green, red

	Choice	**Feedback**
A.	green	
***B.**	red	
C.	red	
D.	blue	
E.	green	

Global Incorrect Feedback
The correct answer is: red.

Question 6a of 14 (3 Intro to Sequences 161989)

Maximum Attempts: 1
Question Type: Text Fill In Blank
Maximum Score: 2
Is Case Sensitive: false
Correct Answer: dog
Question: What is the missing word in this word pattern?

cat, kitten, cow, calf, _____, puppy

Attempt	**Incorrect Feedback**
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: dog.

Question 6b of 14 (3 Intro to Sequences 303443)

Maximum Attempts: 1
Question Type: Text Fill In Blank
Maximum Score: 2
Is Case Sensitive: false
Correct Answer: dog
Question: What is the missing word in this word pattern?

cat, kitten, cow, calf, _____, puppy

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: dog.

Question 6c of 14 (3 Intro to Sequences 303444)

Maximum Attempts: 1
Question Type: Text Fill In Blank
Maximum Score: 2
Is Case Sensitive: false
Correct Answer: cat
Question: What is the missing word in this word pattern?

_____, kitten, cow, calf, dog, puppy

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: cat.

Question 7a of 14 (3 Intro to Sequences 161913)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: What is the missing picture in this pattern?

	Choice	Feedback
A.		
*B.		
C.		

Global Incorrect Feedback
The correct answer is:

Question 7b of 14 (3 Intro to Sequences 303445)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: What is the missing picture in this pattern?

	Choice	Feedback
*A.		
B.		
C.		

Global Incorrect Feedback
The correct answer is:

Question 7c of 14 (3 Intro to Sequences 303446)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: What is the missing picture in this pattern?

	Choice	Feedback
*A.		
B.		
C.		

Global Incorrect Feedback
The correct answer is: .

Question 8a of 14 (3 Intro to Sequences 161902)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: How many baseballs are in the next picture in this pattern?

	Choice	Feedback
A.	25	
***B.**	32	
C.	64	
D.	24	
E.	30	

Global Incorrect Feedback
The correct answer is: 32.

Question 8b of 14 (3 Intro to Sequences 303447)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: How many baseballs does the question mark represent in this pattern?

	Choice	Feedback
***A.**	8	
B.	10	
C.	12	
D.	4	
E.	6	

Global Incorrect Feedback
The correct answer is: 8.

Question 8c of 14 (3 Intro to Sequences 303448)

Maximum Attempts: 1

Question Multiple Choice

Type:

Maximum Score: 2

Question: How many baseballs are in the next picture in this pattern?

	Choice	Feedback
A.	25	
B.	24	
C.	64	
***D.**	32	
E.	30	

Global Incorrect Feedback
The correct answer is: 32.

Question 9a of 14 (3 Intro to Sequences 161990)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 2

Is Case Sensitive: false

Correct Answer: state

Question: What is the missing word in this pattern?

restate, estate, _____, tate, ate, te, e

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: state.

Question 9b of 14 (3 Intro to Sequences 303449)

Maximum Attempts: 1
Question Type: Text Fill In Blank
Maximum Score: 2
Is Case Sensitive: false
Correct Answer: tate
Question: What is the missing word in this pattern?

restate, estate, state, _____, ate, te, e

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: tate.

Question 9c of 14 (3 Intro to Sequences 303450)

Maximum Attempts: 1
Question Type: Text Fill In Blank
Maximum Score: 2
Is Case Sensitive: false
Correct Answer: ate
Question: What is the missing word in this pattern?

restate, estate, state, tate, _____, te, e

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: ate.

Question 10a of 14 (3 Intro to Sequences 161992)

Maximum Attempts: 1
Question Type: Multiple Choice

Maximum Score: 2

Question: What is the missing word in this pattern?

big, three, little, six, microscopic, _____

	Choice	Feedback
A.	zero	
***B.**	nine	
C.	huge	
D.	invisible	
E.	two	

Global Incorrect Feedback
The correct answer is: nine.

Question 10b of 14 (3 Intro to Sequences 303451)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: What is the missing word in this pattern?

big, three, little, six, _____, nine

	Choice	Feedback
A.	zero	
B.	huge	
***C.**	microscopic	
D.	large	
E.	ninety	

Global Incorrect Feedback
The correct answer is: microscopic.

Question 10c of 14 (3 Intro to Sequences 303452)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: What is the missing word in this pattern?

big, _____, little, six, microscopic, nine

	Choice	Feedback
*A.	three	
B.	zero	
C.	huge	
D.	invisible	
E.	ninety	

Global Incorrect Feedback
The correct answer is: three.

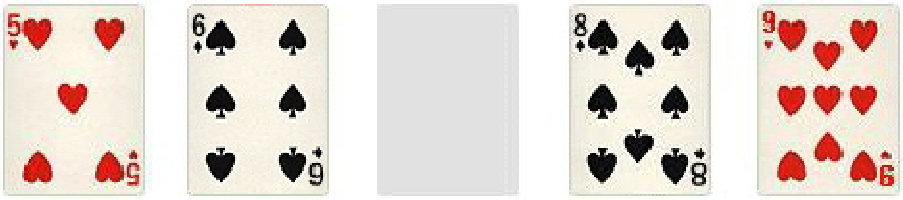
Question 11a of 14 (3 Intro to Sequences 161904)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: What is the missing card in this pattern?



	Choice	Feedback
A.		
B.		
C.		

*D.		

Global Incorrect Feedback
The correct answer is: .

Question 11b of 14 (3 Intro to Sequences 303453)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: What is the next card in this pattern?

	Choice	Feedback
A.		
*B.		
C.		
D.		

Global Incorrect Feedback

The correct answer is: .

Question 11c of 14 (3 Intro to Sequences 303454)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: What is the missing card in this pattern?

	Choice	Feedback
A.		
B.		
*C.		
D.		

Global Incorrect Feedback
The correct answer is: .

Question 12a of 14 (4 Intro to Sequences 328923)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: What is the next phase of the moon?

	Choice	Feedback
*A.		
B.		
C.		
D.		

Global Incorrect Feedback
The correct answer is:

Question 12b of 14 (4 Intro to Sequences 328924)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: What is the next phase of the moon?

	Choice	Feedback
A.		

B.		
*C.		
D.		

Global Incorrect Feedback
The correct answer is:

Question 12c of 14 (4 Intro to Sequences 328925)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: What is the missing phase of the moon?

	Choice	Feedback
A.		
*B.		
C.		
D.		

Global Incorrect Feedback
The correct answer is:

Question 13a of 14 (3 Intro to Sequences 161934)

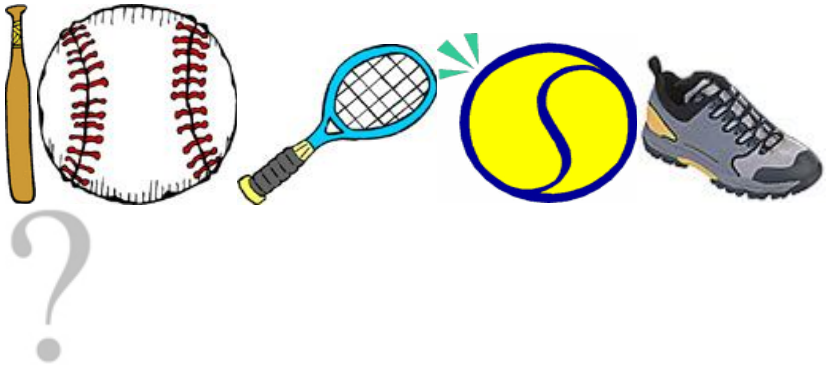
Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following could be the next object in the pattern below?

Check all that apply.



Correct Answers:

	Choice
A.	
*B.	
*C.	

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: and .

Question 13b of 14 (3 Intro to Sequences 303457)

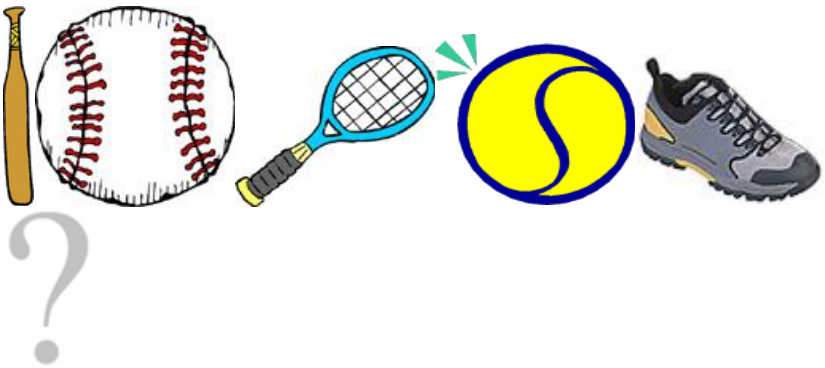
Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following could be the next object in the pattern below?

Check all that apply.



Correct Answers:

	Choice
*A.	

*B.	
C.	

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: and .

Question 13c of 14 (3 Intro to Sequences 303458)

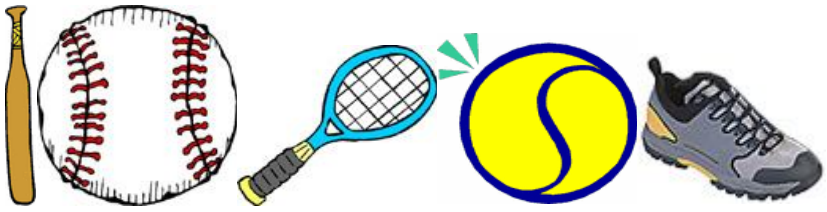
Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following could be the next object in the pattern below?

Check all that apply.



Correct Answers:

	Choice
*A.	
B.	
*C.	

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: and .

Question 14a of 14 (3 Intro to Sequences 301626)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which choice is the next word in the following word pattern?

false, true, false, true, true, false, true, true, _____

	Choice	Feedback
*A.	true	
B.	false	

Global Incorrect Feedback
The correct answer is: true.

Question 14b of 14 (3 Intro to Sequences 303459)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: Which choice is the next word in the following word pattern?

true, false, true, false, false, true, false, false, _____

	Choice	Feedback
A.	true	
*B.	false	

Global Incorrect Feedback
The correct answer is: false.

Question 14c of 14 (3 Intro to Sequences 303460)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: Which choice is the next word in the following word pattern?

me, you, me, me, you, me, me, me, _____

	Choice	Feedback
A.	me	
*B.	you	

Global Incorrect Feedback
The correct answer is: you.

PREVIEW CLOSE

Quiz: Arithmetic Sequences

Question 1a of 12 (2 Arithmetic Sequences 162325)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 4

Question: Find the common difference between the terms of the following arithmetic sequence.

-5, -1, 3, 7, 11, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 4.

Question 1b of 12 (2 Arithmetic Sequences 303530)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 5

Question: Find the common difference between the terms of the following arithmetic sequence.

-6, -1, 4, 9, 14, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 5.

Question 1c of 12 (2 Arithmetic Sequences 303531)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 4

Question: Find the common difference between the terms of the following arithmetic sequence.

-6, -2, 2, 6, 10, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 4.

Question 2a of 12 (2 Arithmetic Sequences 162326)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which choice is the common difference between the terms of this arithmetic sequence?

45, 40, 35, 30, 25, ...

	Choice	Feedback
A.	45	
B.	5	
***C.**	-5	
D.	40	
E.	-(-5)	

Global Incorrect Feedback
The correct answer is: -5.

Question 2b of 12 (2 Arithmetic Sequences 303532)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which choice is the common difference between the terms of this

arithmetic sequence?

45, 39, 33, 27, 21, ...

	Choice	Feedback
A.	45	
***B.**	-6	
C.	6	
D.	39	
E.	-(-6)	

Global Incorrect Feedback
The correct answer is: -6.

Question 2c of 12 (2 Arithmetic Sequences 303533)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which choice is the common difference between the terms of this arithmetic sequence?

55, 50, 45, 40, 35, ...

	Choice	Feedback
A.	55	
B.	5	
C.	10	
***D.**	-5	
E.	-10	

Global Incorrect Feedback
The correct answer is: -5.

Question 3a of 12 (2 Arithmetic Sequences 162327)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 2

Is Case Sensitive: false

Correct Answer: 1/4

Question: Find the common difference between the terms of the following arithmetic sequence.

If necessary, use the slash bar (/) to enter a fraction. Reduce fractions to their lowest terms.

$\frac{5}{12}, \frac{2}{3}, \frac{11}{12}, \frac{7}{6}, \frac{17}{12}$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 1/4.

Question 3b of 12 (2 Arithmetic Sequences 303534)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 2

Is Case Sensitive: false

Correct Answer: 1/2

Question: Find the common difference between the terms of the following arithmetic sequence.

If necessary, use the slash bar (/) to enter a fraction. Reduce fractions to their lowest terms.

$\frac{2}{5}, \frac{9}{10}, \frac{7}{5}, \frac{19}{10}, \frac{12}{5}$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 1/2.

Question 3c of 12 (2 Arithmetic Sequences 303535)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 2

Is Case Sensitive: false

Correct Answer: 1/4

Question: Find the common difference between the terms of the following arithmetic sequence.

If necessary, use the slash bar (/) to enter a fraction. Reduce fractions to their lowest terms.

$\frac{4}{10}, \frac{13}{20}, \frac{9}{10}, \frac{23}{20}, \frac{14}{10}$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 1/4.

Question 4a of 12 (2 Arithmetic Sequences 162333)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following sequences of numbers are arithmetic sequences?

Check all that apply.

Correct Answers:

	Choice
A.	3, -3, 3, -3, 3, ...
B.	1, 5, 10, 15, 20, ...
***C.**	-4, -7, -10, -13, -16, ...
***D.**	8, 10.5, 13, 15.5, 18, ...
***E.**	1,000, 1,001, 1,002, 1,003, 1,004, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: • -4, -7, -10, -13, -16, ... • 8, 10.5, 13, 15.5, 18, ... • 1,000, 1,001, 1,002, 1,003, 1,004, ...

Question 4b of 12 (2 Arithmetic Sequences 303536)

Maximum Attempts: 1
Question Type: Multiple Response
Maximum Score: 2
Question: Which of the following sequences of numbers are arithmetic sequences?

Check all that apply.

Correct Answers:

	Choice
*A.	-5, -8, -11, -14, -17, ...
*B.	0, 5, 10, 15, 20, ...
C.	3, -3, 3, -3, 3, ...
*D.	8, 10.5, 13, 15.5, 18, ...
E.	1,001, 1,001, 1,002, 1,003, 1,004, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: • -5, -8, -11, -14, -17, ... • 0, 5, 10, 15, 20, ... • 8, 10.5, 13, 15.5, 18, ...

Question 4c of 12 (2 Arithmetic Sequences 303537)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following sequences of numbers are arithmetic sequences?

Check all that apply.

Correct Answers:

	Choice
*A.	99, 100, 101, 102, 103, ...
*B.	1, 6, 11, 16, 21, ...
C.	-4, 7, -10, 13, -16, ...
*D.	-3, -5, -7, -9, -11, ...
E.	2, -2, 2, -2, 2, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: • 99, 100, 101, 102, 103, ... • 1, 6, 11, 16, 21, ... • -3, -5, -7, -9, -11, ...

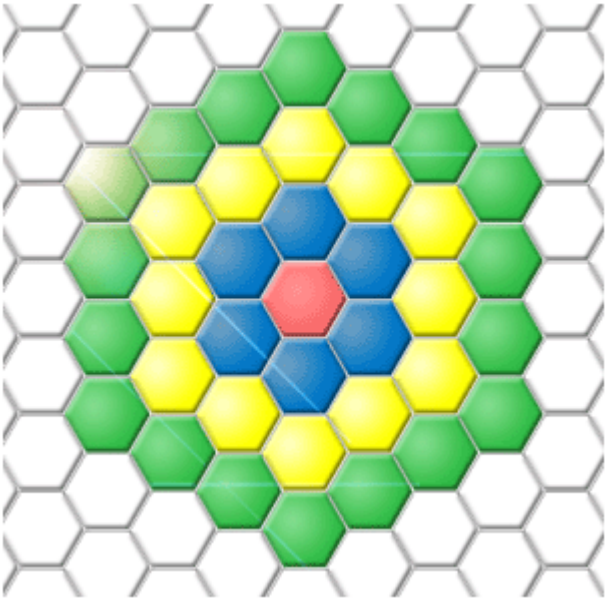
Question 5a of 12 (2 Arithmetic Sequences 162334)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: Tile setters use small tiles in the shape of hexagons to create all sorts of decorative patterns. In the pattern below, a central red tile is surrounded by bigger and bigger 6-sided rings of colored tiles. Only 3 colored rings are shown, but larger rings of white tiles surround the ones you see here.



Construct a sequence of numbers in the following way: First, write down the number of red tiles (1). Then count and write down the number of blue tiles (the next ring out). Then write the number of yellow tiles, the number of green tiles, and so on.

The sequence you build in this way is an arithmetic sequence.

	Choice	Feedback
A.	True	
***B.**	False	

Global Incorrect Feedback
The correct answer is: False.

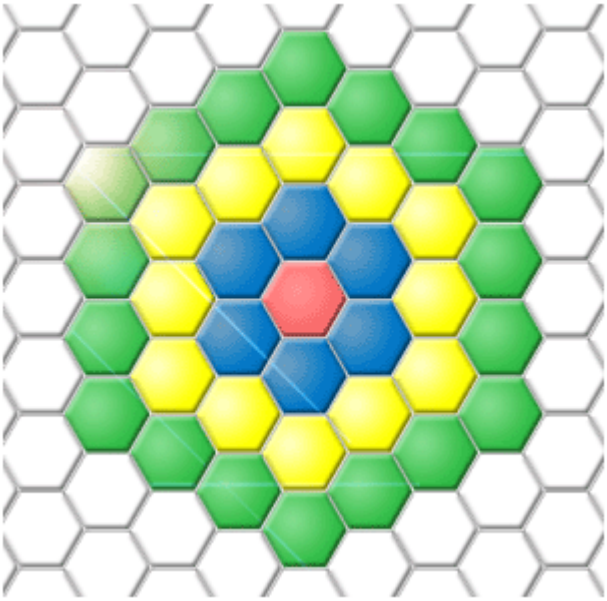
Question 5b of 12 (2 Arithmetic Sequences 303538)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: Tile setters use small tiles in the shape of hexagons to create all sorts of decorative patterns. In the pattern below, a central red tile is surrounded by bigger and bigger 6-sided rings of colored tiles. Only 3 colored rings are shown, but larger rings of white tiles surround the ones you see here.



Construct a sequence of numbers in the following way: First, write down the number of red tiles (1). Then count and write down the number of blue tiles (the next ring out). Then write the number of yellow tiles, the number of green tiles, and so on.

The sequence you build in this way is *not* an arithmetic sequence.

	Choice	Feedback
*A.	True	
B.	False	

Global Incorrect Feedback
The correct answer is: True.

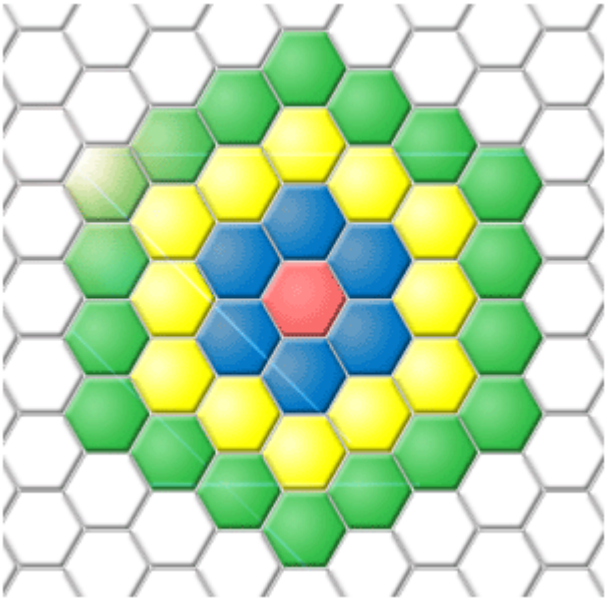
Question 5c of 12 (2 Arithmetic Sequences 303539)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: Tile setters use small tiles in the shape of hexagons to create all sorts of decorative patterns. In the pattern below, a central red tile is surrounded by bigger and bigger 6-sided rings of colored tiles. Only 3 colored rings are shown, but larger rings of white tiles surround the ones you see here.



Construct a sequence of numbers in the following way: First, write down the number of red tiles (1). Then count and write down the number of blue tiles (the next ring out). Then write the number of yellow tiles, the number of green tiles, and so on.

The sequence you build in this way is an arithmetic sequence.

	Choice	Feedback
A.	True	
***B.**	False	

Global Incorrect Feedback
The correct answer is: False.

Question 6a of 12 (2 Arithmetic Sequences 162337)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: The following sequence of numbers is an arithmetic sequence.

1, 1.1, 1.01, 1.001, 1.0001, ...

	Choice	Feedback
A.	True	
***B.**	False	

Global Incorrect Feedback
The correct answer is: False.

Question 6b of 12 (2 Arithmetic Sequences 303540)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: The following sequence of numbers is an arithmetic sequence.

2, 2.2, 2.02, 2.002, 2.0002, ...

	Choice	Feedback
A.	True	
***B.**	False	

Global Incorrect Feedback
The correct answer is: False.

Question 6c of 12 (2 Arithmetic Sequences 303541)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: The following sequence of numbers is an arithmetic sequence.

10, 10.1, 10.01, 10.001, 10.0001, ...

	Choice	Feedback
A.	True	
***B.**	False	

Global Incorrect Feedback
The correct answer is: False.

Question 7a of 12 (2 Arithmetic Sequences 162338)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: Complete the function table below for the function $F(x) = 5x - 7$.

x	1	2	3	4
$F(x)$	-2			

The numbers in the second row of the completed table make an arithmetic sequence.

	Choice	Feedback
*A.	True	
B.	False	

Global Incorrect Feedback
The correct answer is: True.

Question 7b of 12 (2 Arithmetic Sequences 303542)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: Complete the function table below for the function $F(x) = 6x - 8$.

x	1	2	3	4
$F(x)$	-2			

The numbers in the second row of the completed table make an arithmetic sequence.

	Choice	Feedback
*A.	True	
B.	False	

Global Incorrect Feedback
The correct answer is: True.

Question 7c of 12 (2 Arithmetic Sequences 303543)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: Complete the function table below for the function $F(x) = 4x - 6$.

x	1	2	3	4
$F(x)$	-2			

The numbers in the second row of the completed table make an arithmetic sequence.

	Choice	Feedback
*A.	True	
B.	False	

Global Incorrect Feedback

The correct answer is: True.

Question 8a of 12 (2 Arithmetic Sequences 162340)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: Complete the function table below for the function $F(x) = x^2 + 1$.

x	1	2	3	4
$F(x)$	2			

The numbers in the second row of the completed table make an arithmetic sequence.

	Choice	Feedback
A.	True	
*B.	False	

Global Incorrect Feedback
The correct answer is: False.

Question 8b of 12 (2 Arithmetic Sequences 303544)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: Complete the function table below for the function $F(x) = x^2 + 2$.

x	1	2	3	4
$F(x)$	3			

The numbers in the second row of the completed table make an arithmetic sequence.

	Choice	Feedback
A.	True	
*B.	False	

Global Incorrect Feedback
The correct answer is: False.

Question 8c of 12 (2 Arithmetic Sequences 303545)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: Complete the function table below for the function $F(x) = x^2 + 3$.

x	1	2	3	4
$F(x)$	4			

The numbers in the second row of the completed table make an arithmetic sequence.

	Choice	Feedback
A.	True	
***B.**	False	

Global Incorrect Feedback
The correct answer is: False.

Question 9a of 12 (2 Arithmetic Sequences 162343)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which choice is the common difference between the terms of this arithmetic sequence?

$3x + 7y$, $8x + 4y$, $13x + y$, $18x - 2y$, $23x - 5y$, ...

	Choice	Feedback
A.	$-5x - 3y$	
B.	$3x + 7y$	
C.	$5x + 3y$	
D.	$3x - 7y$	
***E.**	$5x - 3y$	

Global Incorrect Feedback
The correct answer is: $5x - 3y$.

Question 9b of 12 (2 Arithmetic Sequences 303546)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which choice is the common difference between the terms of this arithmetic sequence?

$4x + 7y$, $8x + 2y$, $12x + -3y$, $16x - 8y$, $20x - 13y$, ...

	Choice	Feedback
A.	$-5x - 4y$	
***B.**	$4x - 5y$	
C.	$5x + 4y$	
D.	$4x + 5y$	
E.	$5x - 4y$	

Global Incorrect Feedback
The correct answer is: $4x - 5y$.

Question 9c of 12 (2 Arithmetic Sequences 303547)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which choice is the common difference between the terms of this arithmetic sequence?

$3x + 9y$, $6x + 5y$, $9x + y$, $12x - 3y$, $15x - 7y$, ...

	Choice	Feedback
A.	$-3x - 3y$	
***B.**	$3x - 4y$	
C.	$5x + 4y$	
D.	$3x + 4y$	
E.	$5x - 3y$	

Global Incorrect Feedback
The correct answer is: $3x - 4y$.

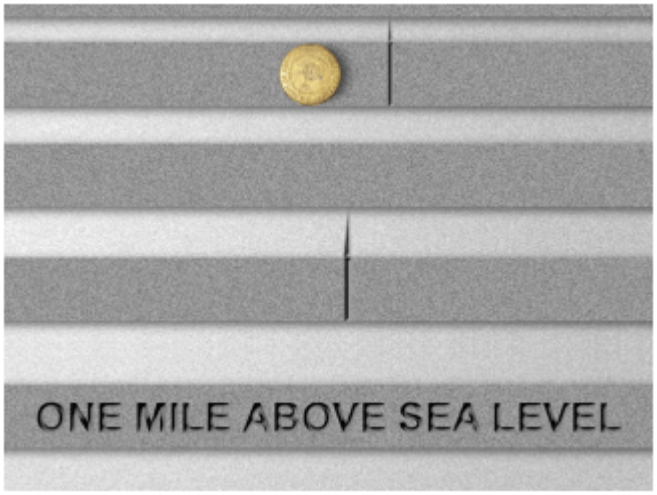
Question 10a of 12 (2 Arithmetic Sequences 162402)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: Denver, the capital of Colorado, is not called the "Mile-High City" for nothing. One of the steps in the front stairway of the state capitol building is marked as being exactly one mile above sea level, as shown in this photograph.



One mile = 63,360 inches, and the risers of the steps of the capitol building are 6 inches high. Heather is visiting the capitol, and as she climbs up from the one-mile step, her altitude above sea level, in inches, is given by the following sequence:

63,360, 63,366, 63,372, 63,378, 63,384, ...

This is an arithmetic sequence of numbers.

	Choice	Feedback
*A.	True	
B.	False	

Global Incorrect Feedback
The correct answer is: True.

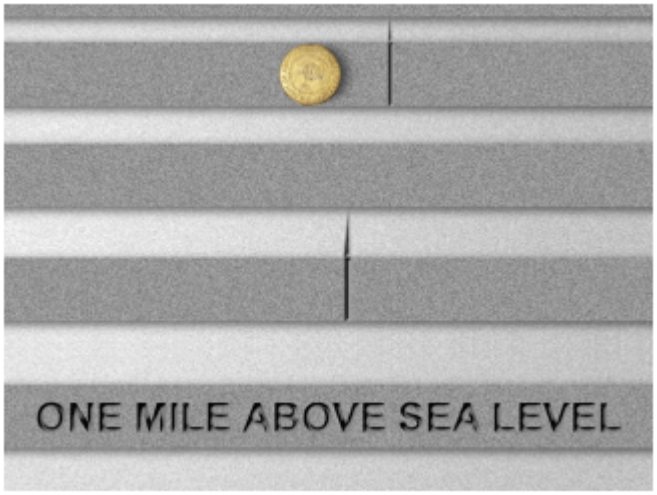
Question 10b of 12 (2 Arithmetic Sequences 303548)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: Denver, the capital of Colorado, is not called the "Mile-High City" for nothing. One of the steps in the front stairway of the state capitol building is marked as being exactly one mile above sea level, as shown in this photograph.



One mile = 63,360 inches, and the risers of the steps of the capitol building are 6.5 inches high. Heather is visiting the capitol, and as she climbs up from the one-mile step, her altitude above sea level, in inches, is given by the following sequence:

63,360, 63,366.5, 63,373, 63,379.5, 63,386, ...

This is an arithmetic sequence of numbers.

	Choice	Feedback
*A.	True	
B.	False	

Global Incorrect Feedback
The correct answer is: True.

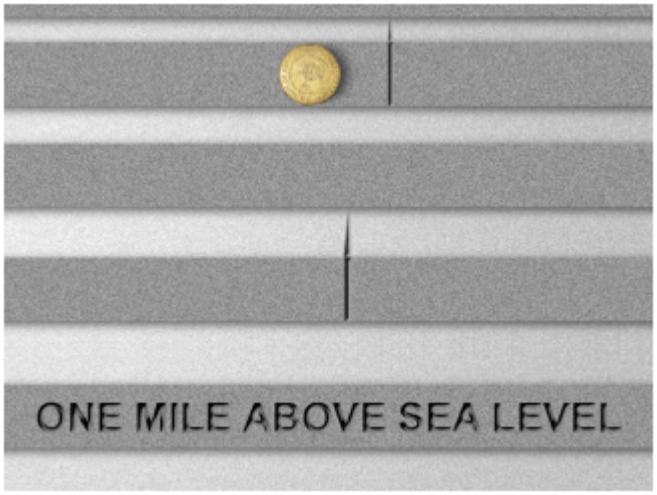
Question 10c of 12 (2 Arithmetic Sequences 303549)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: Denver, the capital of Colorado, is not called the "Mile-High City" for nothing. One of the steps in the front stairway of the state capitol building is marked as being exactly one mile above sea level, as shown in this photograph.



One mile = 63,360 inches, and the risers of the steps of the capitol building are 7 inches high. Heather is visiting the capitol, and as she climbs up from the one-mile step, her altitude above sea level, in inches, is given by the following sequence:

63,360, 63,367, 63,374, 63,381, 63,388, ...

This is an arithmetic sequence of numbers.

	Choice	Feedback
*A.	True	
B.	False	

Global Incorrect Feedback
The correct answer is: True.

Question 11a of 12 (2 Arithmetic Sequences 162408)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following sequences of numbers are arithmetic sequences?

Check all that apply.

Correct Answers:

	Choice
A.	3, 3.1, 3.14, 3.141, 3.1415, ...
*B.	2, 4, 6, 8, 10, ...
*C.	-2, -4, -6, -8, -10, ...
D.	-2, 4, -6, 8, -10, ...

*E.	0, 0, 0, 0, 0, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: • 2, 4, 6, 8, 10, ... • -2, -4, -6, -8, -10, ... • 0, 0, 0, 0, 0, ...

Question 11b of 12 (2 Arithmetic Sequences 303550)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following sequences of numbers are arithmetic sequences?

Check all that apply.

Correct Answers:

	Choice
*A.	1, 1, 1, 1, 1, 1, ...
*B.	1, 3, 5, 7, 9, 11, ...
C.	-2, 4, -6, 8, -10, ...
*D.	-1, -3, -5, -7, -9, -11, ...
E.	2, 2.1, 2.14, 2.141, 2.1415, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: • 1, 1, 1, 1, 1, 1, ...

	• 1, 3, 5, 7, 9, 11, ... • -1, -3, -5, -7, -9, -11, ...

Question 11c of 12 (2 Arithmetic Sequences 303551)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following sequences of numbers are arithmetic sequences?

Check all that apply.

Correct Answers:

	Choice
*A.	3.0, 3.1, 3.2, 3.3, 3.4, ...
B.	2, -4, 6, -8, 10, ...
C.	1, 2, 3, 5, 6, 7, ...
*D.	2, 4, 6, 8, 10, ...
*E.	1, 1, 1, 1, 1, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: • 3.0, 3.1, 3.2, 3.3, 3.4, ... • 2, 4, 6, 8, 10, ... • 1, 1, 1, 1, 1, ...

Question 12a of 12 (2 Arithmetic Sequences 162412)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 11

Question: The following sequence is an arithmetic sequence. You are not shown very many terms of this sequence, but you are shown enough to fill in

the missing number. What number goes in the blank?

7, _____, 15, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 11.

Question 12b of 12 (2 Arithmetic Sequences 303552)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 12

Question: The following sequence is an arithmetic sequence. You are not shown very many terms of this sequence, but you are shown enough to fill in the missing number. What number goes in the blank?

7, _____, 17, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 12.

Question 12c of 12 (2 Arithmetic Sequences 303553)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 13

Question: The following sequence is an arithmetic sequence. You are not shown very many terms of this sequence, but you are shown enough to fill in the missing number. What number goes in the blank?

7, _____, 19, ...

Attempt	Incorrect Feedback

1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 13.

PREVIEW CLOSE

Quiz: Rules For Arithmetic Sequences

Question 1a of 14 (3 Rules for Arithmetic Sequences 162176)

Maximum Attempts: 1
Question Type: Text Fill In Blank
Maximum Score: 2
Is Case Sensitive: false
Correct Answer: 4n + 8
Question: Give the simple formula for the *n*th term of the following arithmetic sequence. Your answer will be of the form *an* + *b*.

12, 16, 20, 24, 28, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 4*n* + 8.

Question 1b of 14 (3 Rules for Arithmetic Sequences 303568)

Maximum Attempts: 1
Question Type: Text Fill In Blank
Maximum Score: 2
Is Case Sensitive: false
Correct Answer: 4n + 6
Question: Give the simple formula for the *n*th term of the following arithmetic sequence. Your answer will be of the form *an* + *b*.

10, 14, 18, 22, 24, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 4*n* + 6.

Question 1c of 14 (3 Rules for Arithmetic Sequences 303569)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 2

Is Case Sensitive: false

Correct Answer: 4n + 10

Question: Give the simple formula for the *n*th term of the following arithmetic sequence. Your answer will be of the form *an* + *b*.

14, 18, 22, 26, 30, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 4*n* + 10.

Question 2a of 14 (3 Rules for Arithmetic Sequences 162182)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which choice is the simple formula for the *n*th term of the following arithmetic sequence?

5, 1, -3, -7, -11, ...

	Choice	Feedback
A.	4*n* + 9	
B.	4*n* + 1	
***C.**	-4*n* + 9	
D.	-4*n* + 1	
E.	5*n* + 4	

Global Incorrect Feedback
The correct answer is: -4*n* + 9.

Question 2b of 14 (3 Rules for Arithmetic Sequences 303570)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which choice is the simple formula for the *n*th term of the following arithmetic sequence?

7, 3, -1, -5, -9, ...

	Choice	Feedback
***A.**	-4*n* + 11	
B.	4*n* + 1	
C.	4*n* + 11	
D.	-4*n* + 1	
E.	5*n* + 4	

Global Incorrect Feedback
The correct answer is: -4*n* + 11.

Question 2c of 14 (3 Rules for Arithmetic Sequences 303571)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which choice is the simple formula for the *n*th term of the following arithmetic sequence?

6, 2, -2, -6, -10, ...

	Choice	Feedback
A.	4*n* + 10	
B.	4*n* + 1	
C.	-4*n* + 1	
***D.**	-4*n* + 10	
E.	5*n* + 4	

Global Incorrect Feedback
The correct answer is: -4*n* + 10.

Question 3a of 14 (3 Rules for Arithmetic Sequences 162183)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which choice is the simple formula for the *n*th term of the following

arithmetic sequence?

5.83, 8.28, 10.73, 13.18, 15.63, ...

	Choice	Feedback
A.	5.83*n* + 2.45	
B.	5.83*n* - 2.45	
C.	2.45*n* + 5.83	
D.	5.83 + (*n* - 1)(2.45)	
***E.**	2.45*n* + 3.38	

Global Incorrect Feedback
The correct answer is: 2.45*n* + 3.38.

Question 3b of 14 (3 Rules for Arithmetic Sequences 303572)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which choice is the simple formula for the *n*th term of the following arithmetic sequence?

4.83, 6.28, 7.73, 9.18, 10.63

	Choice	Feedback
***A.**	1.45*n* + 3.38	
B.	4.83*n* - 1.45	
C.	1.45*n* + 4.83	
D.	4.83 + (*n* - 1)(1.45)	
E.	4.83*n* + 1.45	

Global Incorrect Feedback
The correct answer is: 1.45*n* + 3.38.

Question 3c of 14 (3 Rules for Arithmetic Sequences 303573)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which choice is the simple formula for the *n*th term of the following arithmetic sequence?

6.83, 10.28, 13.73, 17.18, 20.63, ...

	Choice	Feedback
A.	6.83*n* + 3.45	
B.	6.83*n* - 3.45	
***C.**	3.45*n* + 3.38	
D.	6.83 + (*n* - 1)(3.45)	
E.	3.45*n* + 6.83	

Global Incorrect Feedback
The correct answer is: 3.45*n* + 3.38.

Question 4a of 14 (3 Rules for Arithmetic Sequences 302970)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 3517

Question: Use the explicit formula $a_n = a_1 + (n - 1) \cdot d$ to find the 500th term of the sequence below.

24, 31, 38, 45, 52, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 3,517.

Question 4b of 14 (3 Rules for Arithmetic Sequences 303574)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 3018

Question: Use the explicit formula $a_n = a_1 + (n - 1) \cdot d$ to find the 500th term of the sequence below.

24, 30, 36, 42, 48, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 3,018.

Question 4c of 14 (3 Rules for Arithmetic Sequences 303575)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 7017

Question: Use the explicit formula $a_n = a_1 + (n - 1) \cdot d$ to find the 1,000th term of the sequence below.

24, 31, 38, 45, 52, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 7,017.

Question 5a of 14 (3 Rules for Arithmetic Sequences 162218)

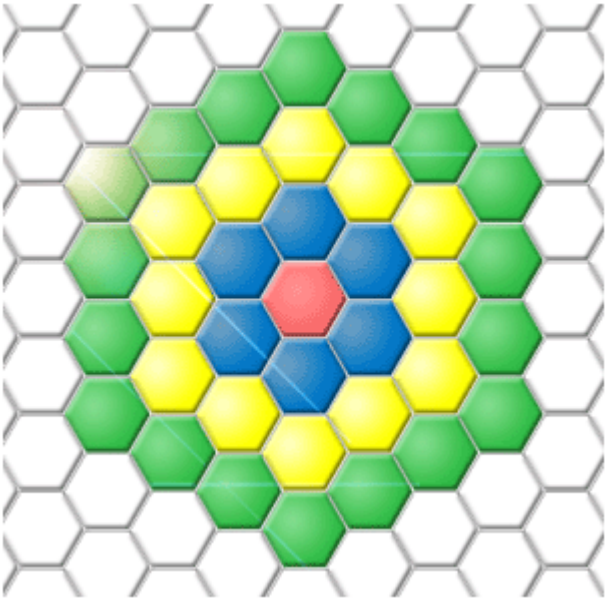
Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 150

Question: Tile setters use small tiles in the shape of hexagons to create all sorts of decorative patterns. In the pattern below, a central red tile is surrounded by bigger and bigger 6-sided rings of colored tiles. Only 3 colored rings are shown, but larger rings of white tiles surround the ones you see here.



Don't count the red tile. The smallest ring has 6 blue tiles in it. The next ring has 12 yellow tiles. Count the number of green tiles in the third ring. Based on the pattern established by the first 3 rings, how many tiles there are in the 25th ring of white tiles, counting outward from the central red tile?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 150.

Question 5b of 14 (3 Rules for Arithmetic Sequences 303576)

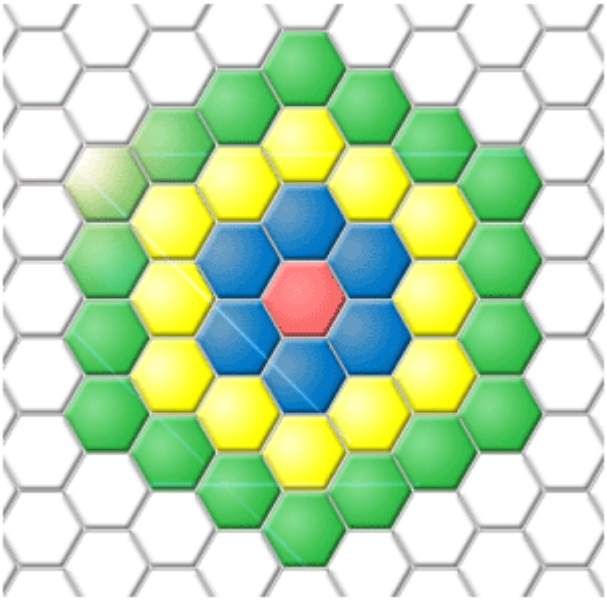
Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 180

Question: Tile setters use small tiles in the shape of hexagons to create all sorts of decorative patterns. In the pattern below, a central red tile is surrounded by bigger and bigger 6-sided rings of colored tiles. Only 3 colored rings are shown, but larger rings of white tiles surround the ones you see here.



Don't count the red tile. The smallest ring has 6 blue tiles in it. The next ring has 12 yellow tiles. Count the number of green tiles in the third ring. Based on the pattern established by the first 3 rings, how many tiles there are in the 30th ring of white tiles, counting outward from the central red tile?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 180.

Question 5c of 14 (3 Rules for Arithmetic Sequences 303577)

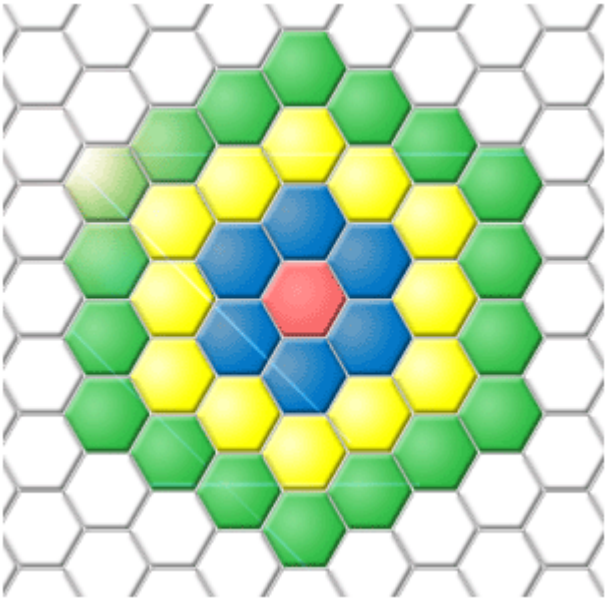
Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 300

Question: Tile setters use small tiles in the shape of hexagons to create all sorts of decorative patterns. In the pattern below, a central red tile is surrounded by bigger and bigger 6-sided rings of colored tiles. Only 3 colored rings are shown, but larger rings of white tiles surround the ones you see here.



Don't count the red tile. The smallest ring has 6 blue tiles in it. The next ring has 12 yellow tiles. Count the number of green tiles in the third ring. Based on the pattern established by the first 3 rings, how many tiles there are in the 50th ring of white tiles, counting outward from the central red tile?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 300.

Question 6a of 14 (3 Rules for Arithmetic Sequences 162221)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The explicit formula for the nth term of an arithmetic sequence is $a_n = a_1 + (n - 1) \cdot d$. What is the simple formula corresponding to the explicit formula if the first term of the sequence is -10 and the difference between terms in the sequence is 3?

	Choice	Feedback
*A.	$3n - 13$	
B.	$3n + 13$	
C.	$3n - 10$	

D.	$3n + 10$	
E.	$3n - 7$	

Global Incorrect Feedback
The correct answer is: $3n - 13$.

Question 6b of 14 (3 Rules for Arithmetic Sequences 303578)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The explicit formula for the nth term of an arithmetic sequence is $a_n = a_1 + (n - 1) \bullet d$. What is the simple formula corresponding to the explicit formula if the first term of the sequence is -10 and the difference between terms in the sequence is 4?

	Choice	**Feedback**
A.	$4n - 6$	
B.	$4n + 14$	
C.	$4n - 10$	
D.	$4n + 10$	
***E.**	$4n - 14$	

Global Incorrect Feedback
The correct answer is: $4n - 14$.

Question 6c of 14 (3 Rules for Arithmetic Sequences 303579)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The explicit formula for the nth term of an arithmetic sequence is $a_n = a_1 + (n - 1) \bullet d$. What is the simple formula corresponding to the explicit formula if the first term of the sequence is -10 and the difference between terms in the sequence is 5?

	Choice	**Feedback**
A.	$5n - 10$	
B.	$5n + 15$	
***C.**	$5n - 15$	
D.	$5n + 10$	
E.	$5n - 5$	

Global Incorrect Feedback
The correct answer is: 5*n* - 15.

Question 7a of 14 (3 Rules for Arithmetic Sequences 162228)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The simple formula for the *n*th term of an arithmetic sequence is $a_n = 4n + 16$. What is the explicit formula corresponding to the simple formula?

	Choice	Feedback
***A.**	$a_n = 20 + (n - 1)(4)$	
B.	$a_n = 16 + (n - 1)(4)$	
C.	$a_n = 16 + 4n$	
D.	$a_n = 4 + (n - 1)(16)$	
E.	$a_n = 20 + (n)(4)$	

Global Incorrect Feedback
The correct answer is: $a_n = 20 + (n - 1)(4)$.

Question 7b of 14 (3 Rules for Arithmetic Sequences 303580)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The simple formula for the *n*th term of an arithmetic sequence is $a_n = 5n + 15$. What is the explicit formula corresponding to the simple formula?

	Choice	Feedback
A.	$a_n = 15 + 5n$	
B.	$a_n = 15 + (n - 1)(5)$	
***C.**	$a_n = 20 + (n - 1)(5)$	
D.	$a_n = 5 + (n - 1)(15)$	
E.	$a_n = 20 + (n)/(5)$	

Global Incorrect Feedback
The correct answer is: $a_n = 20 + (n - 1)(5)$.

Question 7c of 14 (3 Rules for Arithmetic Sequences 303581)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The simple formula for the nth term of an arithmetic sequence is $a_n = 6n + 14$. What is the explicit formula corresponding to the simple formula?

	Choice	Feedback
A.	$a_n = 14 + (n - 1)(6)$	
***B.**	$a_n = 20 + (n - 1)(6)$	
C.	$a_n = 14 + 6n$	
D.	$a_n = 6 + (n - 1)(14)$	
E.	$a_n = 20 + (n)(6)$	

Global Incorrect Feedback
The correct answer is: $a_n = 20 + (n - 1)(6)$.

Question 8a of 14 (3 Rules for Arithmetic Sequences 162272)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which of the following is the graph of an arithmetic sequence whose first term is 0 and whose common difference is 0.5?

	Choice	Feedback
A.	Graph A	
B.	Graph B	
C.	Graph C	
***D.**	Graph D	
E.	Graph E	

Global Incorrect Feedback
The correct answer is: Graph D.

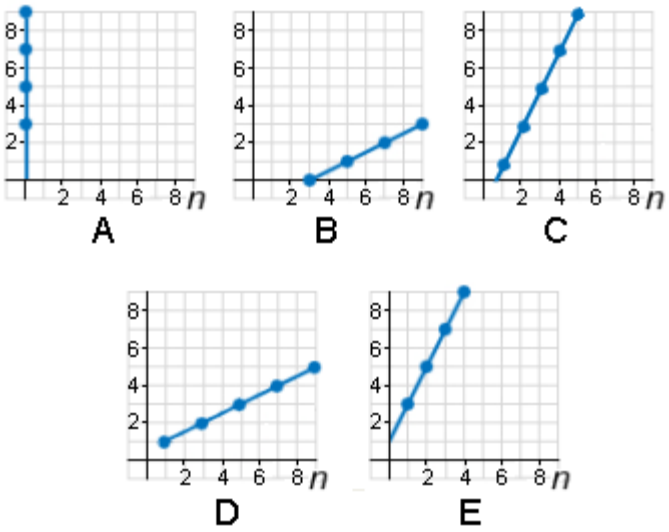
Question 8b of 14 (3 Rules for Arithmetic Sequences 303582)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which of the following is the graph of an arithmetic sequence whose first term is 1 and whose common difference is 0.5?



	Choice	Feedback
A.	Graph A	
B.	Graph B	
C.	Graph C	
***D.**	Graph D	
E.	Graph E	

Global Incorrect Feedback
The correct answer is: Graph D.

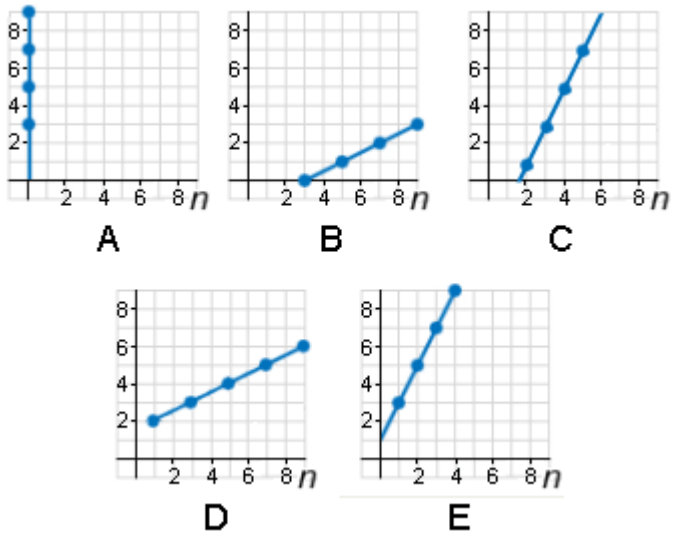
Question 8c of 14 (3 Rules for Arithmetic Sequences 303583)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which of the following is the graph of an arithmetic sequence whose first term is 2 and whose common difference is 0.5?



	Choice	Feedback
A.	Graph A	
B.	Graph B	
C.	Graph C	
***D.**	Graph D	
E.	Graph E	

Global Incorrect Feedback
The correct answer is: Graph D.

Question 9a of 14 (3 Rules for Arithmetic Sequences 162306)

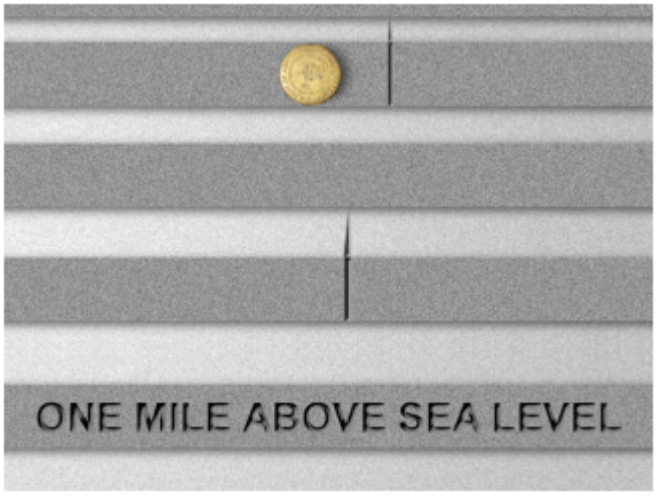
Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 63684

Question: Denver, the capital of Colorado, famously has an altitude of one mile above sea level. The state capitol building has a long concrete stairway going up to it from the street, and one of the steps is marked as being exactly one mile above sea level. This is shown in the photograph below.



One mile = 63,360 inches, and the risers of the steps of the capitol building are 6 inches high. Barry is visiting the capitol, and as he climbs up from the one-mile step, his altitude above sea level, in inches, is given by the following sequence:

63,360, 63,366, 63,372, 63,378, 63,384, ...

What is Barry's altitude above sea level, in inches, when he is standing on the 55th step above the one-mile step (counting the one-mile step itself as step #1)?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 63,684.

Question 9b of 14 (3 Rules for Arithmetic Sequences 303584)

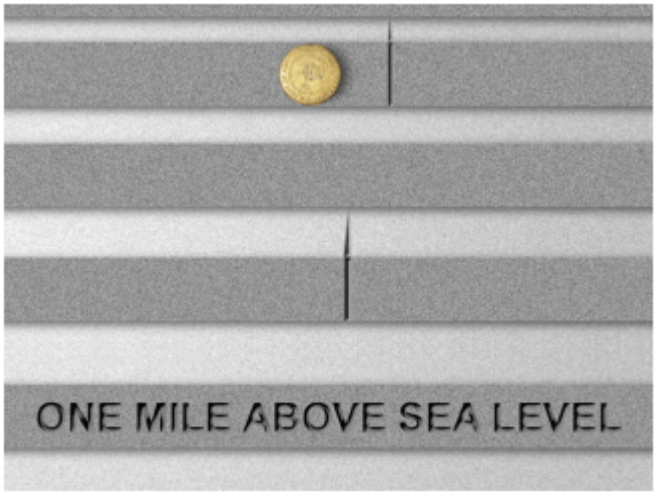
Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 63792

Question: Denver, the capital of Colorado, famously has an altitude of one mile above sea level. The state capitol building has a long concrete stairway going up to it from the street, and one of the steps is marked as being exactly one mile above sea level. This is shown in the photograph below.



One mile = 63360 inches, and the risers of the steps of the capitol building are 8 inches high. Barry is visiting the capitol, and as he climbs up from the one-mile step, his altitude above sea level, in inches, is given by the following sequence:

63,360, 63,368, 63,376, 63,384, 63,392, ...

What is Barry's altitude above sea level, in inches, when he is standing on the 55th step above the one-mile step (counting the one-mile step itself as step #1)?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 63,792.

Question 9c of 14 (3 Rules for Arithmetic Sequences 303585)

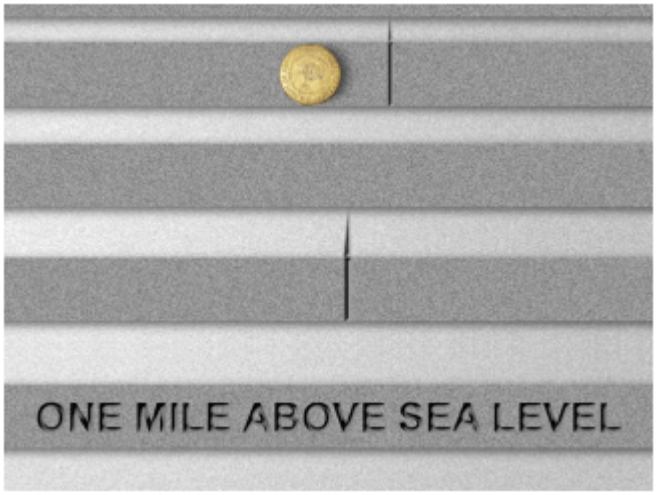
Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 63744

Question: Denver, the capital of Colorado, famously has an altitude of one mile above sea level. The state capitol building has a long concrete stairway going up to it from the street, and one of the steps is marked as being exactly one mile above sea level. This is shown in the photograph below.



One mile = 63360 inches, and the risers of the steps of the capitol building are 6 inches high. Barry is visiting the capitol, and as he climbs up from the one-mile step, his altitude above sea level, in inches, is given by the following sequence:

63,360, 63,366, 63,372, 63,378, 63,384, ...

What is Barry's altitude above sea level, in inches, when he is standing on the 65th step above the one-mile step (counting the one-mile step itself as step #1)?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 63,744.

Question 10a of 14 (3 Rules for Arithmetic Sequences 162308)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 0

Question: A certain arithmetic sequence has the recursive formula $a_n = a_{n-1} + d$. If the common difference between the terms of the sequence is -11, what term follows the term that has the value 11?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 0.

Question 10b of 14 (3 Rules for Arithmetic Sequences 303586)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 0

Question: A certain arithmetic sequence has the recursive formula $a_n = a_{n-1} + d$. If the common difference between the terms of the sequence is -13, what term follows the term that has the value 13?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 0.

Question 10c of 14 (3 Rules for Arithmetic Sequences 303587)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 0

Question: A certain arithmetic sequence has the recursive formula $a_n = a_{n-1} + d$. If the common difference between the terms of the sequence is -15, what term follows the term that has the value 15?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 0.

Question 11a of 14 (3 Rules for Arithmetic Sequences 162309)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 11

Question: When it is 2 hours after 2 o'clock, then it is 4 o'clock (2 + 2 = 4). When it is 10 hours after 10 o'clock, then it is 8 o'clock. In this kind of "clock arithmetic," 10 + 10 = 8.

When a clock time gets bigger than 12, you subtract 12 and take the answer as the actual clock time. For example, if you subtract 12 from 20, the answer is 8, so 20 o'clock is really 8 o'clock.

Brad has a certain medication that he needs to take every 5 hours without fail, starting at 1 o'clock on a certain day. The sequence of clock times that he takes his pills is 1, 6, 11, 4, 9, ...

What is the clock time when Brad takes his 15th pill? Enter a number from 1 to 12.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 11.

Question 11b of 14 (3 Rules for Arithmetic Sequences 303588)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 4

Question:

When it is 2 hours after 2 o'clock, then it is 4 o'clock (2 + 2 = 4). When it is 10 hours after 10 o'clock, then it is 8 o'clock. In this kind of "clock arithmetic," 10 + 10 = 8.

When a clock time gets bigger than 12, you subtract 12 and take the answer as the actual clock time. For example, if you subtract 12 from 20, the answer is 8, so 20 o'clock is really 8 o'clock.

Brad has a certain medication that he needs to take every 5 hours without fail, starting at 1 o'clock on a certain day. The sequence of clock times that he takes his pills is 1, 6, 11, 4, 9, ...

What is the clock time when Brad takes his 16th pill? Enter a number from 1 to 12.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 4.

Question 11c of 14 (3 Rules for Arithmetic Sequences 303589)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 9

Question: When it is 2 hours after 2 o'clock, then it is 4 o'clock (2 + 2 = 4). When it is 10 hours after 10 o'clock, then it is 8 o'clock. In this kind of "clock arithmetic," 10 + 10 = 8.

When a clock time gets bigger than 12, you subtract 12 and take the answer as the actual clock time. For example, if you subtract 12 from 20, the answer is 8, so 20 o'clock is really 8 o'clock.

Brad has a certain medication that he needs to take every 5 hours without fail, starting at 1 o'clock on a certain day. The sequence of clock times that he takes his pills is 1, 6, 11, 4, 9, ...

What is the clock time when Brad takes his 17th pill? Enter a number from 1 to 12.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 9.

Question 12a of 14 (3 Rules for Arithmetic Sequences 162312)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Given the following two formulas for an arithmetic sequence, which of

the statements below are true?

Check all that apply.

The explicit formula:

$a_n = a_1 + (n - 1) \cdot d$

The recursive formula:

$a_n = a_{n-1} + d$

Correct Answers:

	Choice
A.	a_1 is the previous term in the sequence
***B.**	a_1 is the first term in the sequence
C.	a_{n-1} is the nth term in the sequence
***D.**	n is the index of the sequence
E.	a_n is the previous term in the sequence

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: a_1 is the first term in the sequence, and n is the index of the sequence.

Question 12b of 14 (3 Rules for Arithmetic Sequences 303590)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Given the following two formulas for an arithmetic sequence, which of the statements below are true?

Check all that apply.

The explicit formula:

$a_n = a_1 + (n - 1) \cdot d$

The recursive formula:

$a_n = a_{n-1} + d$

Correct Answers:

	Choice
***A.**	a_1 is the first term in the sequence
B.	a_1 is the previous term in the sequence
C.	a_{n-1} is the nth term in the sequence
D.	a_n is the previous term in the sequence
***E.**	n is the index of the sequence

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: a_1 is the first term in the sequence, and n is the index of the sequence.

Question 12c of 14 (3 Rules for Arithmetic Sequences 303591)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Given the following two formulas for an arithmetic sequence, which of the statements below are true?

Check all that apply.

The explicit formula:

$a_n = a_1 + (n - 1) \cdot d$

The recursive formula:

$a_n = a_{n-1} + d$

Correct Answers:

	Choice
A.	a_1 is the previous term in the sequence
B.	a_{n-1} is the nth term in the sequence
***C.**	a_1 is the first term in the sequence
D.	a_n is the previous term in the sequence
***E.**	n is the index of the sequence

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: a_1 is the first term in the sequence, and n is the index of the sequence.

Question 13a of 14 (3 Rules for Arithmetic Sequences 162314)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 8

Question: A certain arithmetic sequence has the following explicit formula for the nth term:

$a_n = 3 + (n - 1)(8)$

The same sequence has the following recursive formula:

$a_n = a_{n-1} +$ _____

What number belongs in the blank space in the recursive formula?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback

	The correct answer is: 8.

Question 13b of 14 (3 Rules for Arithmetic Sequences 303592)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 6

Question: A certain arithmetic sequence has the following explicit formula for the *n*th term:

$a_n = 2 + (n - 1)(6)$

The same sequence has the following recursive formula:

$a_n = a_{n-1} +$ _____

What number belongs in the blank space in the recursive formula?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 6.

Question 13c of 14 (3 Rules for Arithmetic Sequences 303593)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 7

Question: A certain arithmetic sequence has the following explicit formula for the *n*th term:

$a_n = 4 + (n - 1)(7)$

The same sequence has the following recursive formula:

$a_n = a_{n-1} +$ _____

What number belongs in the blank space in the recursive formula?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 7.

Question 14a of 14 (3 Rules for Arithmetic Sequences 254578)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: The recursive equation $a_n = a_{n-1} + d$ means "The value of any term in an arithmetic sequence is the value of the following term plus some constant amount."

	Choice	Feedback
A.	True	
***B.**	False	

Global Incorrect Feedback
The correct answer is: False.

Question 14b of 14 (3 Rules for Arithmetic Sequences 303594)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: The recursive equation $a_n = a_{n-1} + d$ means "The value of any term in an arithmetic sequence is the value of the previous term plus some constant amount."

	Choice	Feedback
***A.**	True	
B.	False	

Global Incorrect Feedback
The correct answer is: True.

Question 14c of 14 (3 Rules for Arithmetic Sequences 303595)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: The recursive equation $a_n = a_{n-1} + d$ means "The value of any term in the arithmetic sequence is the value of the previous term minus some variable amount d."

	Choice	Feedback
A.	True	
***B.**	False	

Global Incorrect Feedback
The correct answer is: False.

PREVIEW CLOSE

Quiz: Geometric Sequences

Question 1a of 13 (2 Geometric Sequences 162723)

Maximum Attempts: 1
Question Type: Text Fill In Blank
Maximum Score: 2
Is Case Sensitive: false
Correct Answer: 4/5
Question: Find the common ratio of the following geometric sequence.

If necessary, use the slash bar (/) to enter a fraction. Reduce fractions to their lowest terms.

$\frac{5}{12}, \frac{1}{3}, \frac{4}{15}, \frac{16}{75}, \frac{64}{375}$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 4/5.

Question 1b of 13 (2 Geometric Sequences 303612)

Maximum Attempts: 1
Question Type: Text Fill In Blank
Maximum Score: 2
Is Case Sensitive: false
Correct Answer: 3/2
Question: Find the common ratio of the following geometric sequence.

If necessary, use the slash bar (/) to enter a fraction. Reduce fractions to their lowest terms.

$\frac{4}{15}, \frac{2}{5}, \frac{3}{5}, \frac{9}{10}, \frac{27}{20}$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 3/5.

Question 1c of 13 (2 Geometric Sequences 303613)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 2

Is Case Sensitive: false

Correct Answer: 4/5

Question: Find the common ratio of the following geometric sequence.

If necessary, use the slash bar (/) to enter a fraction. Reduce fractions to their lowest terms.

$\frac{5}{12}, \frac{1}{3}, \frac{4}{15}, \frac{16}{75}, \frac{64}{375}$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 4/5.

Question 2a of 13 (2 Geometric Sequences 162729)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 4.5

Question: Find the common ratio of the following geometric sequence.

2.512, 11.304, 50.868, 228.906, 1,030.077, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 4.5.

Question 2b of 13 (2 Geometric Sequences 303614)

Maximum Attempts: 1
Question Type: Numeric Fill In Blank
Maximum Score: 2
Correct Answer: 3.5
Question: Find the common ratio of the following geometric sequence.

3.512, 12.292, 43.022, 150.577, 527.020, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 3.5.

Question 2c of 13 (2 Geometric Sequences 303615)

Maximum Attempts: 1
Question Type: Numeric Fill In Blank
Maximum Score: 2
Correct Answer: 5
Question: Find the common ratio of the following geometric sequence.

1.512, 7.56, 37.8, 189, 945, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 5.

Question 3a of 13 (2 Geometric Sequences 162730)

Maximum Attempts: 1
Question Type: Numeric Fill In Blank
Maximum Score: 2
Correct Answer: 5
Question: Find the first term of the following geometric sequence.

_____, 10, 20, 40, 80, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 5.

Question 3b of 13 (2 Geometric Sequences 303616)

Maximum Attempts: 1
Question Type: Numeric Fill In Blank
Maximum Score: 2
Correct Answer: 5
Question: Find the first term of the following geometric sequence.

_____, 15, 45, 135, 675, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 5.

Question 3c of 13 (2 Geometric Sequences 303617)

Maximum Attempts: 1
Question Type: Numeric Fill In Blank
Maximum Score: 2
Correct Answer: 10
Question: Find the first term of the following geometric sequence.

_____, 20, 40, 80, 160, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 10.

Question 4a of 13 (2 Geometric Sequences 162731)

Maximum Attempts: 1
Question Type: Numeric Fill In Blank
Maximum Score: 2
Correct Answer: 14
Question: Find the first term of the following geometric sequence.

_____, 42, 126, 378, 1,134, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 14.

Question 4b of 13 (2 Geometric Sequences 303618)

Maximum Attempts: 1
Question Type: Numeric Fill In Blank
Maximum Score: 2
Correct Answer: 13
Question: Find the first term of the following geometric sequence.

_____, 39, 117, 351, 1,053, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 13.

Question 4c of 13 (2 Geometric Sequences 303620)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 12

Question: Find the first term of the following geometric sequence.

_____, 36, 108, 324, 972, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 12.

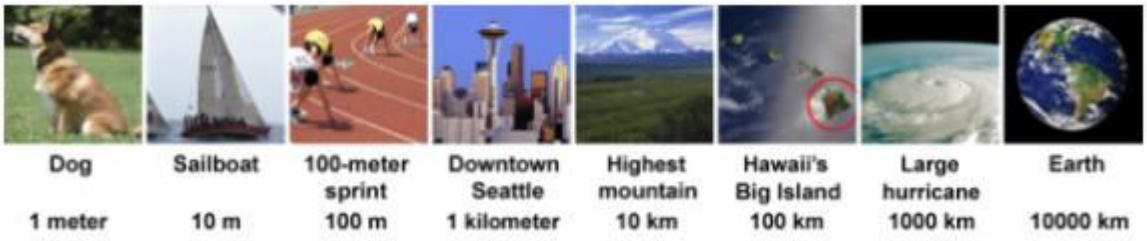
Question 5a of 13 (2 Geometric Sequences 162732)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The following pictures depict objects whose sizes have different orders of magnitude. The approximate sizes are indicated in meters and kilometers.



The sizes in the above sequence, converted to meters, make a geometric sequence. What is the ratio of the sequence?

	Choice	Feedback

A.	0.01	
B.	0.1	
C.	1	
***D.**	10	
E.	100	

Global Incorrect Feedback
The correct answer is: 10.

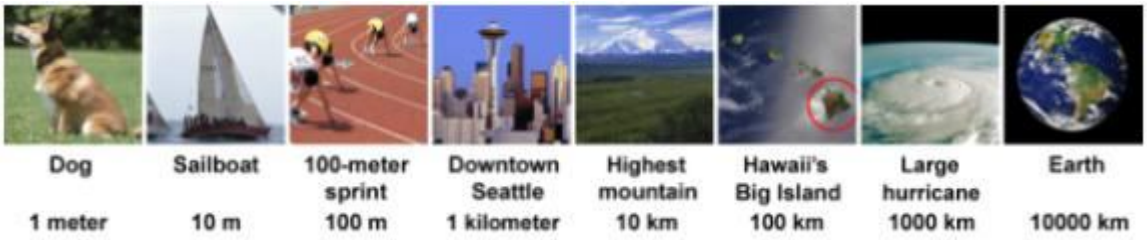
Question 5b of 13 (2 Geometric Sequences 303621)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The following pictures depict objects whose sizes have different orders of magnitude. The approximate sizes are indicated in meters and kilometers.



The sizes in the above sequence, converted to meters, make a geometric sequence. What is the ratio of the sequence?

	Choice	**Feedback**
A.	0.01	
B.	0.1	
C.	1	
***D.**	10	
E.	100	

Global Incorrect Feedback
The correct answer is: 10.

Question 5c of 13 (2 Geometric Sequences 303622)

Maximum 1

Attempts:

Question Type: Multiple Choice

Maximum Score: 2

Question: The following pictures depict objects whose sizes have different orders of magnitude. The approximate sizes are indicated in meters and kilometers.

The sizes in the above sequence, converted to meters, make a geometric sequence. What is the ratio of the sequence?

	Choice	Feedback
A.	0.01	
B.	0.1	
***C.**	10	
D.	1	
E.	100	

Global Incorrect Feedback
The correct answer is: 10.

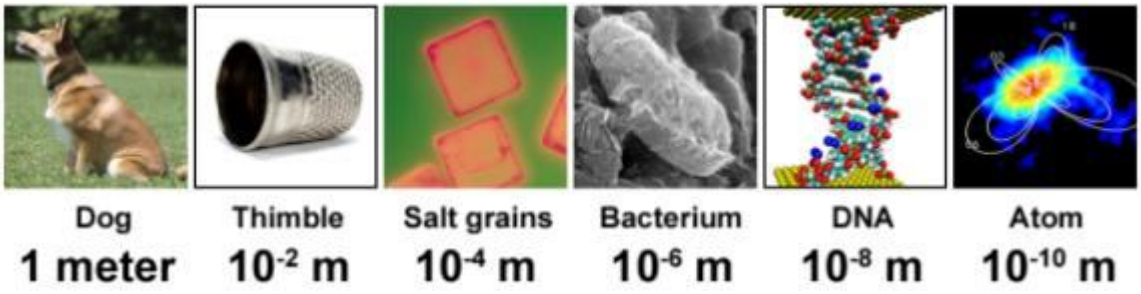
Question 6a of 13 (2 Geometric Sequences 162734)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The following pictures depict objects whose sizes have different orders of magnitude. The approximate sizes are indicated in meters, with negative powers of 10.



The sizes in the above sequence make a geometric sequence. What is the ratio of the sequence?

	Choice	Feedback
*A.	0.01	
B.	0.1	
C.	1	
D.	10	
E.	100	

Global Incorrect Feedback
The correct answer is: 0.01.

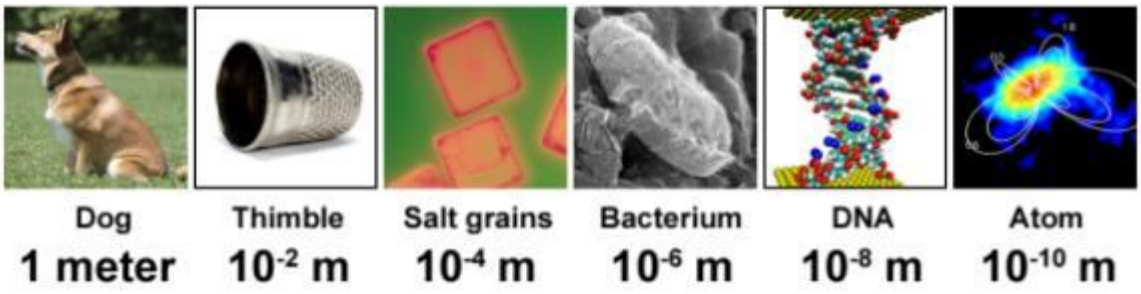
Question 6b of 13 (2 Geometric Sequences 303623)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The following pictures depict objects whose sizes have different orders of magnitude. The approximate sizes are indicated in meters, with negative powers of 10.



The sizes in the above sequence make a geometric sequence. What is the ratio of the sequence?

	Choice	Feedback
A.	1	

B.	0.1	
***C.**	0.01	
D.	10	
E.	100	

Global Incorrect Feedback
The correct answer is: 0.01.

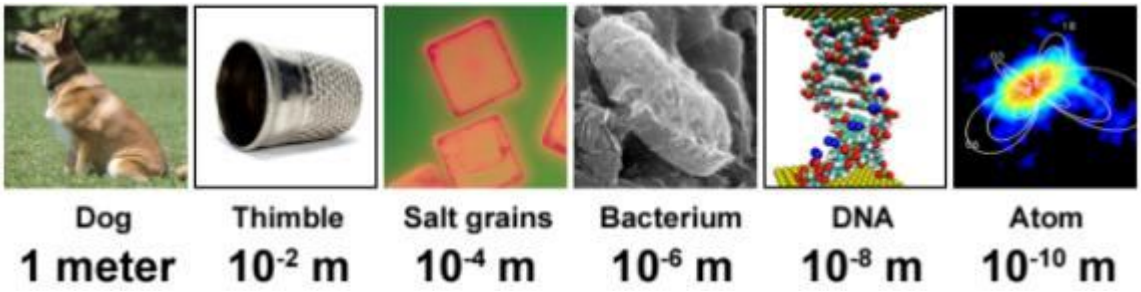
Question 6c of 13 (2 Geometric Sequences 303624)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The following pictures depict objects whose sizes have different orders of magnitude. The approximate sizes are indicated in meters, with negative powers of 10.



The sizes in the above sequence make a geometric sequence. What is the ratio of the sequence?

	Choice	**Feedback**
***A.**	0.01	
B.	0.1	
C.	1	
D.	10	
E.	100	

Global Incorrect Feedback
The correct answer is: 0.01.

Question 7a of 13 (2 Geometric Sequences 162736)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which two geometric sequences in the following list have the same ratio?

Check all that apply.

Correct Answers:

	Choice
*A.	5, 15, 45, 135, 405
B.	4.3, 17.2, 68.8, 275.2, 1,100.8, ...
C.	6.8, 23.8, 83.3, 291.55, 1,020.425, ...
*D.	-4.8, -14.4, -43.2, -129.6, -388.8, ...
E.	5, -15, 45, -135, 405

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: • 5, 15, 45, 135, 405 • -4.8, -14.4, -43.2, -129.6, -388.8, ...

Question 7b of 13 (2 Geometric Sequences 303625)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which two geometric sequences in the following list have the same ratio?

Check all that apply.

Correct Answers:

	Choice
*A.	5, 20, 80, 240, 960, ...

*B.	4.3, 17.2, 68.8, 275.2, 1,100.8, ...
C.	6.8, 23.8, 83.3, 291.55, 1,020.425, ...
D.	-4.8, -14.4, -43.2, -129.6, -388.8, ...
E.	5, -15, 45, -135, 405

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: • 5, 20, 80, 240, 960, ... • 4.3, 17.2, 68.8, 275.2, 1,100.8, ...

Question 7c of 13 (2 Geometric Sequences 303626)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which two geometric sequences in the following list have the same ratio?

Check all that apply.

Correct Answers:

	Choice
A.	5, 15, 45, 135, 405, ...
B.	4.3, 17.2, 68.8, 275.2, 1,100.8, ...
*C.	6.8, 23.8, 83.3, 291.55, 1,020.425, ...
*D.	-4.8, -16.8, -58.8, -205.8, -720.3, ...
E.	5, -15, 45, -135, 405, ...

Attempt	Incorrect Feedback

1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: • 6.8, 23.8, 83.3, 291.55, 1,020.425, ... • -4.8, -16.8, -58.8, -205.8, -720.3, ...

Question 8a of 13 (2 Geometric Sequences 162737)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Below are five number sequences. Which ones are geometric sequences?

Check all that apply.

Correct Answers:

	Choice
A.	2, 3, 5, 9, 17, ...
***B.**	$\frac{4}{9}, \frac{2}{3}, 1, \frac{3}{2}, \frac{9}{4}$
C.	$\frac{1}{3}, \frac{2}{9}, \frac{3}{27}, \frac{4}{81}, \frac{5}{343}$
***D.**	3, -15, 75, -375, 1,875, ...
E.	3, -15, -33, -51, -69, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: • $\frac{4}{9}, \frac{2}{3}, 1, \frac{3}{2}, \frac{9}{4}$

	• 3, -15, 75, -375, 1,875, ...

Question 8b of 13 (2 Geometric Sequences 303627)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Below are five number sequences. Which ones are geometric sequences?

Check all that apply.

Correct Answers:

	Choice
***A.**	1, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$, ...
B.	2, 3, 5, 9, 17, ...
***C.**	3, -12, 48, -192, 768, ...
D.	$\frac{1}{3}$, $\frac{2}{9}$, $\frac{3}{27}$, $\frac{4}{81}$, $\frac{5}{343}$, ...
E.	3, -15, -33, -51, -69, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: • 1, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$, ... • 3, -12, 48, -192, 768, ...

Question 8c of 13 (2 Geometric Sequences 303628)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Below are five number sequences. Which ones are geometric sequences?

Check all that apply.

Correct Answers:

	Choice
A.	2, 3, 5, 9, 17, ...
B.	$\frac{1}{3}, \frac{2}{9}, \frac{3}{27}, \frac{4}{81}, \frac{5}{343}, \ldots$
***C.**	$\frac{1}{4}, \frac{1}{2}$, 1, 2, 4, ...
D.	3, -15, -33, -51, -69, ...
***E.**	2, -14, 98, -686, 4,802, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: • $\frac{1}{4}, \frac{1}{2}$, 1, 2, 4, ... • 2, -14, 98, -686, 4,802, ...

Question 9a of 13 (2 Geometric Sequences 256334)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: The arithmetic mean of two numbers *x* and *y* is defined as the following:

$$\text{Mean} = \frac{x + y}{2}$$

In a geometric sequence, such as 1, 2, 4, 8, 16, ..., each term is the arithmetic mean of the term that comes right before it and the term that comes right after it.

	Choice	Feedback
A.	True	
*B.	False	

Global Incorrect Feedback
The correct answer is: False.

Question 9b of 13 (2 Geometric Sequences 303629)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: The arithmetic mean of two numbers *x* and *y* is defined as the following:

$$\text{Mean} = \frac{x + y}{2}$$

In a geometric sequence, such as 1, 2, 4, 8, 16, ..., each term is the arithmetic mean of the term that comes right before it and the term that comes right after it.

	Choice	Feedback
A.	True	
*B.	False	

Global Incorrect Feedback
The correct answer is: False.

Question 9c of 13 (2 Geometric Sequences 303630)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: The arithmetic mean of two numbers *x* and *y* is defined as the following:

$$\text{Mean} = \frac{x + y}{2}$$

In a geometric sequence, such as 1, 2, 4, 8, 16, ..., each term is the arithmetic mean of the term that comes right before it and the term that comes right after it.

	Choice	Feedback

A.	True	
***B.**	False	

Global Incorrect Feedback
The correct answer is: False.

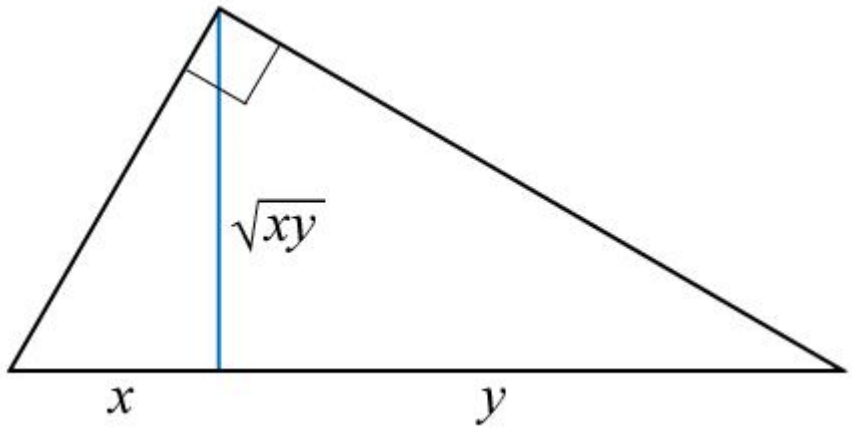
Question 10a of 13 (2 Geometric Sequences 256335)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: The geometric mean of two numbers x and y is defined as the quantity $\sqrt{xy}$. It is called the *geometric mean* because it can be used in geometry to calculate the altitude of a right triangle:



In a geometric sequence, such as 1, 2, 4, 8, 16, ..., each term is the geometric mean of the term that comes right before it and the term that comes right after it.

	Choice	**Feedback**
***A.**	True	
B.	False	

Global Incorrect Feedback
The correct answer is: True.

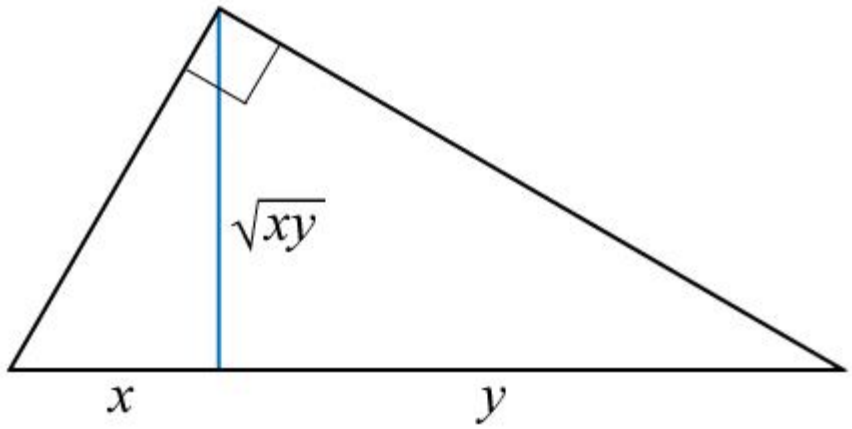
Question 10b of 13 (2 Geometric Sequences 303631)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: The geometric mean of two numbers *x* and *y* is defined as the quantity $\sqrt{xy}$. It is called the *geometric mean* because it can be used in geometry to calculate the altitude of a right triangle:



In a geometric sequence, such as 1, 2, 4, 8, 16, ..., each term is the geometric mean of the term that comes right before it and the term that comes right after it.

	Choice	Feedback
***A.**	True	
B.	False	

Global Incorrect Feedback
The correct answer is: True.

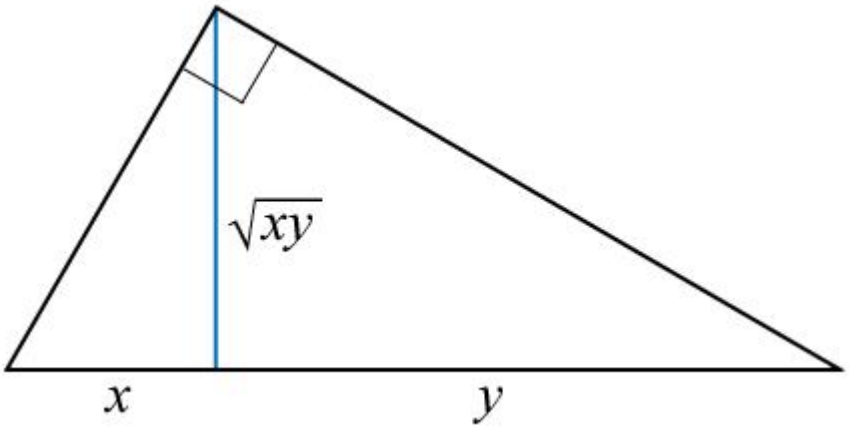
Question 10c of 13 (2 Geometric Sequences 303632)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: The geometric mean of two numbers *x* and *y* is defined as the quantity $\sqrt{xy}$. It is called the *geometric mean* because it can be used in geometry to calculate the altitude of a right triangle:



In a geometric sequence, such as 1, 2, 4, 8, 16, ..., each term is the geometric mean of the term that comes right before it and the term that comes right after it.

	Choice	Feedback
*A.	True	
B.	False	

Global Incorrect Feedback
The correct answer is: True.

Question 11a of 13 (2 Geometric Sequences 303159)

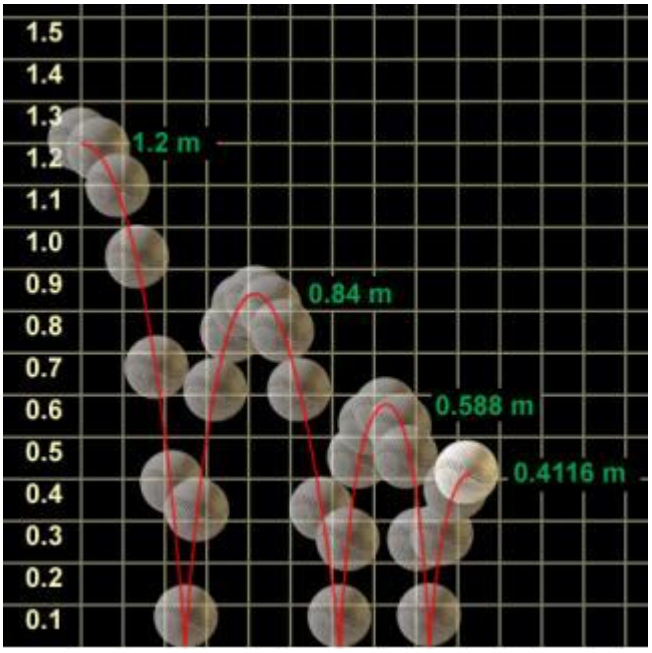
Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 0.7

Question: The photograph below shows a bouncing ball in front of an illuminated grid. The heights of the ball's bounces make a geometric sequence. What is the ratio of the sequence? Round your answer to the nearest tenth.



Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 0.7

Question 11b of 13 (2 Geometric Sequences 303159)

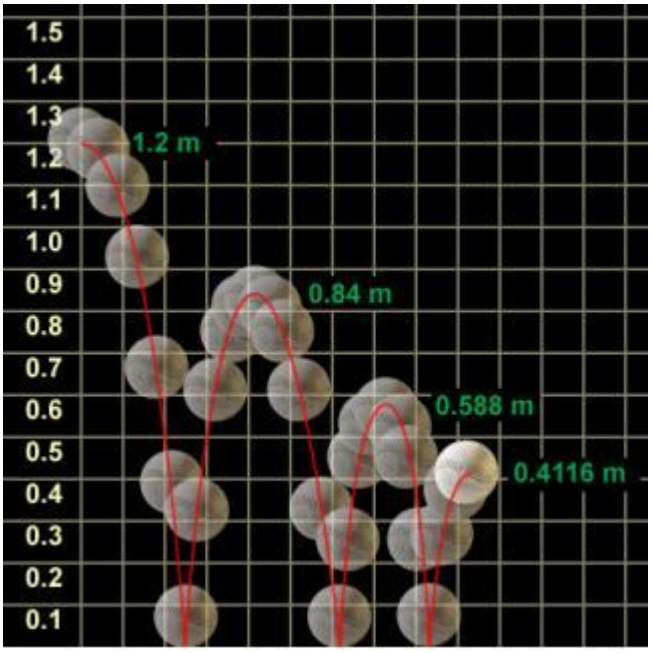
Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 0.7

Question: The photograph below shows a bouncing ball in front of an illuminated grid. The heights of the ball's bounces make a geometric sequence. What is the ratio of the sequence? Round your answer to the nearest tenth.



Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 0.7

Question 11c of 13 (2 Geometric Sequences 303159)

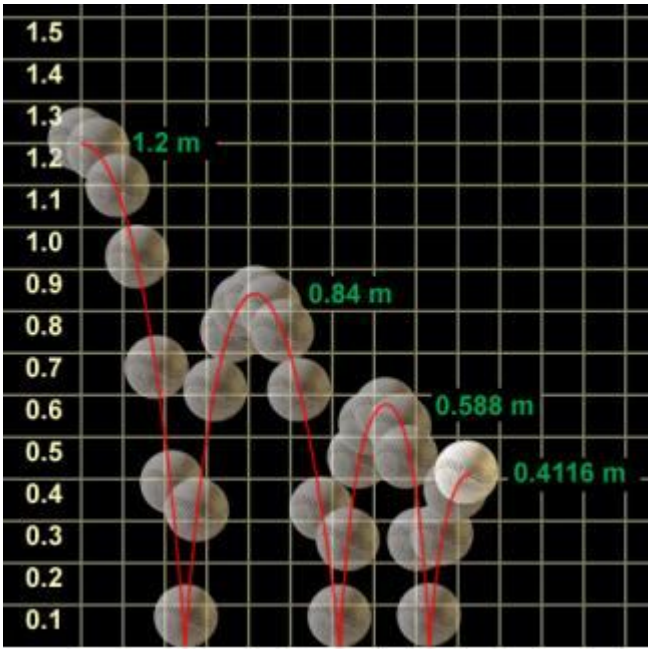
Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 0.7

Question: The photograph below shows a bouncing ball in front of an illuminated grid. The heights of the ball's bounces make a geometric sequence. What is the ratio of the sequence? Round your answer to the nearest tenth.



Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 0.7

Question 12a of 13 (2 Geometric Sequences 162803)

Maximum Attempts: 1
Question Type: Numeric Fill In Blank
Maximum Score: 2
Correct Answer: -277.02
Question: What is the next number in this geometric sequence?

-3.42, 10.26, -30.78, 92.34, _____, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: -277.02.

Question 12b of 13 (2 Geometric Sequences 303635)

Maximum Attempts: 1
Question Type: Numeric Fill In Blank
Maximum Score: 2
Correct Answer: -262.44
Question: What is the next number in this geometric sequence?

-3.24, 9.72, -29.16, 87.48, _____, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: -262.44.

Question 12c of 13 (2 Geometric Sequences 303636)

Maximum Attempts: 1
Question Type: Numeric Fill In Blank
Maximum Score: 2
Correct Answer: -282.69
Question: What is the next number in this geometric sequence?

-3.49, 10.47, -31.41, 94.23, _____, ...

Attempt	Incorrect Feedback
1st	

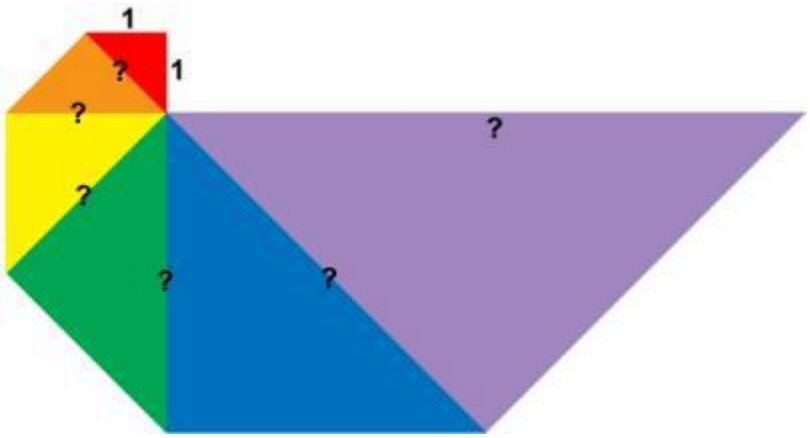
	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: -282.69.

Question 13a of 13 (2 Geometric Sequences 162804)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: The spiral in the picture is made from 45º right triangles. The smallest

triangle (red) has a side length of 1. You can use the Pythagorean theorem to find the length of its hypotenuse. The next (orange) triangle has a side length exactly matching the hypotenuse of the smallest triangle, and so on with the larger triangles of other colors. The lengths of the hypotenuses of all the triangles (starting with the smallest) make a geometric sequence. What is the ratio of the sequence?



Before you try to answer this question, use the Pythagorean theorem to find the length of the hypotenuses of the first few triangles.

	Choice	Feedback
A.	2	
B.	45	
C.	90	
D.	$\sqrt{3}$	
***E.**	$\sqrt{2}$	

Global Incorrect Feedback
The correct answer is: $\sqrt{2}$.

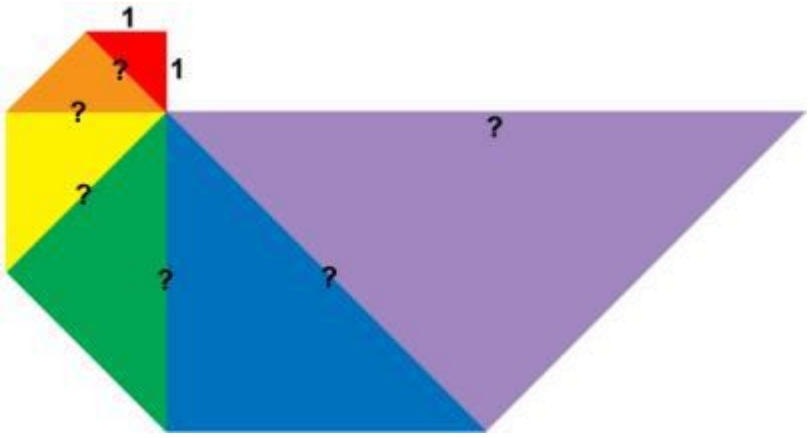
Question 13b of 13 (2 Geometric Sequences 303637)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The spiral in the picture is made from 45º right triangles. The smallest triangle (red) has a side length of 1. You can use the Pythagorean theorem to find the length of its hypotenuse. The next (orange) triangle has a side length exactly matching the hypotenuse of the smallest triangle, and so on with the larger triangles of other colors. The lengths of the hypotenuses of all the triangles (starting with the smallest) make a geometric sequence. What is the ratio of the sequence?



Before you try to answer this question, use the Pythagorean theorem to find the length of the hypotenuses of the first few triangles.

	Choice	Feedback
*A.	$\sqrt{2}$	
B.	$\sqrt{3}$	
C.	90	
D.	45	
E.	2	

Global Incorrect Feedback
The correct answer is: $\sqrt{2}$.

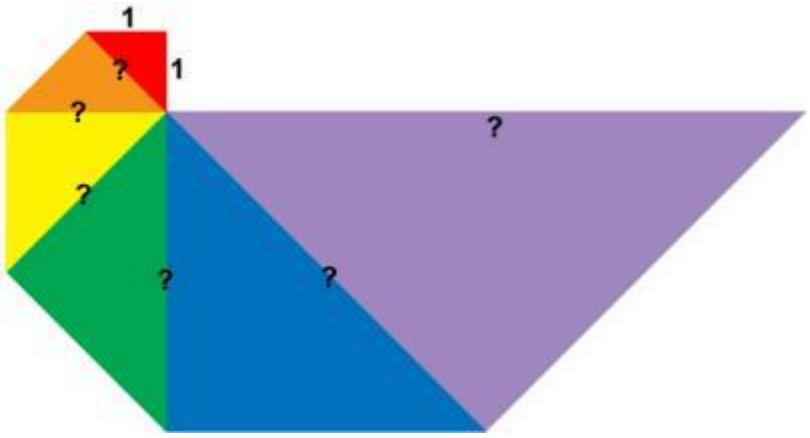
Question 13c of 13 (2 Geometric Sequences 303638)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The spiral in the picture is made from 45º right triangles. The smallest triangle (red) has a side length of 1. You can use the Pythagorean theorem to find the length of its hypotenuse. The next (orange) triangle has a side length exactly matching the hypotenuse of the smallest triangle, and so on with the larger triangles of other colors. The lengths of the hypotenuses of all the triangles (starting with the smallest) make a geometric sequence. What is the ratio of the sequence?



Before you try to answer this question, use the Pythagorean theorem to find the length of the hypotenuses of the first few triangles.

	Choice	Feedback
A.	$\sqrt{3}$	
***B.**	$\sqrt{2}$	
C.	2	
D.	45	
E.	90	

Global Incorrect Feedback
The correct answer is: $\sqrt{2}$.

PREVIEW CLOSE

Quiz: Formulas for Geometric Sequences

Question 1a of 12 (2 Geometric Sequence Formulas 162808)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 160

Question: A geometric sequence is defined recursively by $a_n = 4a_{n-1}$. The 10th term of the sequence is $a_{10} = 2.5$. What is a_{13}?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 160.

Question 1b of 12 (2 Geometric Sequence Formulas 303654)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 224

Question: A geometric sequence is defined recursively by $a_n = 4a_{n-1}$. The 10th term of the sequence is $a_{10} = 3.5$. What is a_{13}?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 224.

Question 1c of 12 (2 Geometric Sequence Formulas 303656)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 96

Question: A geometric sequence is defined recursively by $a_n = 4a_{n-1}$. The 10th term of the sequence is $a_{10} = 1.5$. What is a_{13}?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 96.

Question 2a of 12 (2 Geometric Sequence Formulas 162809)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: A geometric sequence is defined recursively by $a_n = 12a_{n-1}$. The first term of the sequence is 0.001. Which of the following is the explicit formula for the nth term of the sequence?

	Choice	Feedback
A.	$0.001 \bullet 12^n$	
B.	$0.001 \bullet 12^{n+1}$	
***C.**	$0.001 \bullet 12^{n-1}$	
D.	$12 \bullet 0.001^n$	
E.	$12 \bullet 0.001^{n-1}$	

Global Incorrect Feedback
The correct answer is: $0.001 \bullet 12^{n-1}$.

Question 2b of 12 (2 Geometric Sequence Formulas 303657)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: A geometric sequence is defined recursively by $a_n = 15a_{n-1}$. The first term of the sequence is 0.0001. Which of the following is the explicit formula for the nth term of the sequence?

	Choice	Feedback
***A.**	$0.0001 \bullet 15^{n-1}$	

B.	$0.0001 \bullet 15^{n+1}$	
C.	$0.0001 \bullet 15^{n}$	
D.	$15 \bullet 0.0001^{n}$	
E.	$15 \bullet 0.0001^{n-1}$	

Global Incorrect Feedback
The correct answer is: $0.0001 \bullet 15^{n-1}$.

Question 2c of 12 (2 Geometric Sequence Formulas 303658)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: A geometric sequence is defined recursively by $a_n = 20a_{n-1}$. The first term of the sequence is 0.01. Which of the following is the explicit formula for the *n*th term of the sequence?

	Choice	**Feedback**
A.	$0.01 \bullet 20^{n}$	
B.	$0.01 \bullet 20^{n+1}$	
C.	$20 \bullet 0.01^{n-1}$	
D.	$20 \bullet 0.01^{n}$	
***E.**	$0.01 \bullet 20^{n-1}$	

Global Incorrect Feedback
The correct answer is: $0.01 \bullet 20^{n-1}$.

Question 3a of 12 (2 Geometric Sequence Formulas 162810)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: A geometric sequence is defined by the explicit formula $a_n = 5(-3)^{n-1}$. What is the recursive formula for the *n*th term of this sequence?

	Choice	**Feedback**
A.	$a_{n+1} = 5a_n$	
B.	$a_{n+1} = -3a_n$	
C.	$a_n = 5a_{n-1}$	
***D.**	$a_n = -3a_{n-1}$	
E.	$a_{n+1} = -3a_n$	

Global Incorrect Feedback
The correct answer is: $a_n = -3a_{n-1}$.

Question 3b of 12 (2 Geometric Sequence Formulas 303659)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: A geometric sequence is defined by the explicit formula $a_n = 3(-5)^{n-1}$. What is the recursive formula for the nth term of this sequence?

	Choice	Feedback
A.	$a_{n+1} = 5a_n$	
B.	$a_{n+1} = -3a_n$	
***C.**	$a_n = -5a_{n-1}$	
D.	$a_n = -3a_{n-1}$	
E.	$a_{n+1} = -3a_n$	

Global Incorrect Feedback
The correct answer is: $a_n = -5a_{n-1}$.

Question 3c of 12 (2 Geometric Sequence Formulas 303660)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: A geometric sequence is defined by the explicit formula $a_n = 5(-4)^{n-1}$. What is the recursive formula for the nth term of this sequence?

	Choice	Feedback
A.	$a_{n+1} = 5a_n$	
B.	$a_{n+1} = -4a_n$	
C.	$a_n = 5a_{n-1}$	
D.	$a_{n+1} = -4a_n$	
***E.**	$a_n = -4a_{n-1}$	

Global Incorrect Feedback
The correct answer is: $a_n = -4a_{n-1}$.

Question 4a of 12 (2 Geometric Sequence Formulas 162812)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following are recursive formulas for the *n*th term of the following geometric sequence?

Check all that apply.

$\frac{2}{3}$, 1, $\frac{3}{2}$, $\frac{9}{4}$, ...

Correct Answers:

	Choice
A.	$a_n = \frac{3}{2a_{n-1}}$
***B.**	$a_n = 1.5a_{n-1}$
C.	$a_n = \frac{2}{3}\left(\frac{3}{2}\right)^{n-1}$
***D.**	$a_n = \frac{3a_{n-1}}{2}$
E.	$a_n = \frac{2a_{n-1}}{3}$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: $a_n = 1.5a_{n-1}$ and $a_n = \frac{3a_{n-1}}{2}$.

Question 4b of 12 (2 Geometric Sequence Formulas 303661)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following are recursive formulas for the *n*th term of the following geometric sequence?

Check all that apply.

$\frac{3}{4}$, 1, $\frac{4}{3}$, $\frac{16}{9}$, ...

Correct Answers:

	Choice
A.	$a_1 = \frac{3a_{n-1}}{4}$
***B.**	$a_n = 1.33a_{n-1}$
C.	$a_n = \frac{3}{4}\left(\frac{4}{3}\right)^{n-1}$
D.	$a_1 = \frac{4}{3a_{n-1}}$
***E.**	$a_1 = \frac{4a_{n-1}}{3}$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: $a_n = 1.33a_{n-1}$ and $a_1 = \frac{4}{3a_{n-1}}$.

Question 4c of 12 (2 Geometric Sequence Formulas 303662)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following are recursive formulas for the *n*th term of the following geometric sequence?

Check all that apply.

$\frac{8}{9}$, 1, $\frac{9}{8}$, $\frac{81}{64}$, ...

Correct Answers:

	Choice
***A.**	$a_n = 1.125a_{n-1}$

B.	$a_n = 0.88a_{n-1}$
C.	$a_n = \frac{2}{3}\left(\frac{3}{2}\right)^{n-1}$
D.	$a_n = \frac{8a_{n-1}}{9}$
***E.**	$a_n = \frac{9a_{n-1}}{8}$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: $a_n = 1.5a_{n-1}$ and $a_n = \frac{9a_{n-1}}{8}$.

Question 5a of 12 (2 Geometric Sequence Formulas 162820)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which choice is the explicit formula for the following geometric sequence?

-0.1, 0.02, -0.004, 0.0008, -0.00016, ...

	Choice	Feedback
***A.**	$a_n = -0.1(-0.2)^{n-1}$	
B.	$a_n = 0.2(-0.2)^{n-1}$	
C.	$a_n = 0.1(0.2)^n$	
D.	$a_n = 0.1(-0.2)^{n-1}$	
E.	$a_n = -0.1(0.2)^{n-1}$	

Global Incorrect Feedback
The correct answer is: $a_n = -0.1(-0.2)^{n-1}$.

Question 5b of 12 (2 Geometric Sequence Formulas 303663)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which choice is the explicit formula for the following geometric sequence?

-0.1, 0.03, -0.009, 0.0027, -0.00081, ...

	Choice	Feedback
A.	$a_n = -0.1(0.3)^{n-1}$	
B.	$a_n = 0.3(-0.3)^{n-1}$	
C.	$a_n = 0.1(0.3)^{n}$	
D.	$a_n = 0.1(-0.3)^{n-1}$	
***E.**	$a_n = -0.1(-0.3)^{n-1}$	

Global Incorrect Feedback
The correct answer is: $a_n = -0.1(-0.3)^{n-1}$.

Question 5c of 12 (2 Geometric Sequence Formulas 303665)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which choice is the explicit formula for the following geometric sequence?

-0.1, 0.04, -0.016, 0.0064, -0.00256, ...

	Choice	Feedback
A.	$a_n = 0.4(-0.4)^{n-1}$	
***B.**	$a_n = -0.1(-0.4)^{n-1}$	
C.	$a_n = 0.1(0.4)^{n}$	
D.	$a_n = 0.1(-0.4)^{n-1}$	
E.	$a_n = -0.1(0.4)^{n-1}$	

Global Incorrect Feedback
The correct answer is: $a_n = -0.1(-0.4)^{n-1}$.

Question 6a of 12 (3 Geometric Sequence Formulas 162821)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 2

Is Case Sensitive: false

Correct Answer: 1/512

Question: Rich and Amy love each other very much. They are sharing a cookie. Rich takes half, and gives the other half to Amy. But Amy loves Rich so much that she does not eat her whole piece. Instead, she breaks it in half and gives the rest back to Rich. Then he breaks this piece in half and gives the rest back to Amy. They keep up this cute game until the crumb they are passing back and forth is too small to work with.

Here is the sequence of cookie sizes:

1, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$, $\frac{1}{32}$, ...

What fraction of a whole cookie is represented by the 10th term of this sequence?

Use the slash bar (/) to enter a fraction. Reduce fractions to their lowest terms.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 1/512.

Question 6b of 12 (3 Geometric Sequence Formulas 303666)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 2

Is Case false

Sensitive:

Correct Answer: 1/256

Question: Rich and Amy love each other very much. They are sharing a cookie. Rich takes half of the cookie, and gives the other half to Amy. But Amy loves Rich so much that she does not eat her whole piece. Instead, she takes half of it and gives the rest back to Rich. Then he breaks the cookie in half again and gives the rest back to Amy. They keep up this cute game until the crumb they are passing back and forth is too small to work with.

Here is the sequence of cookie sizes:

$1, \frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{16}, \frac{1}{32}, \ldots$

What fraction of a whole cookie is represented by the 9th term of this sequence?

Use the slash bar (/) to enter a fraction. Reduce fractions to their lowest terms.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 1/256.

Question 6c of 12 (3 Geometric Sequence Formulas 303667)

Maximum Attempts: 1

Question Type: Text Fill In Blank

Maximum Score: 2

Is Case Sensitive: false

Correct Answer: 1/2048

Question: Rich and Amy love each other very much. They are sharing a cookie. Rich takes half, and gives the other half to Amy. But Amy loves Rich so much that she does not eat her whole piece. Instead, she breaks it in half and gives the rest back to Rich. Then he breaks this piece in half and gives the rest back to Amy. They keep up this cute game until the crumb they are passing back and forth is too small to work with.

Here is the sequence of cookie sizes:

1, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$, $\frac{1}{32}$, ...

What fraction of a whole cookie is represented by the 12th term of this sequence?

Use the slash bar (/) to enter a fraction. Reduce fractions to their lowest terms.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 1/2,048.

Question 7a of 12 (3 Geometric Sequence Formulas 162830)

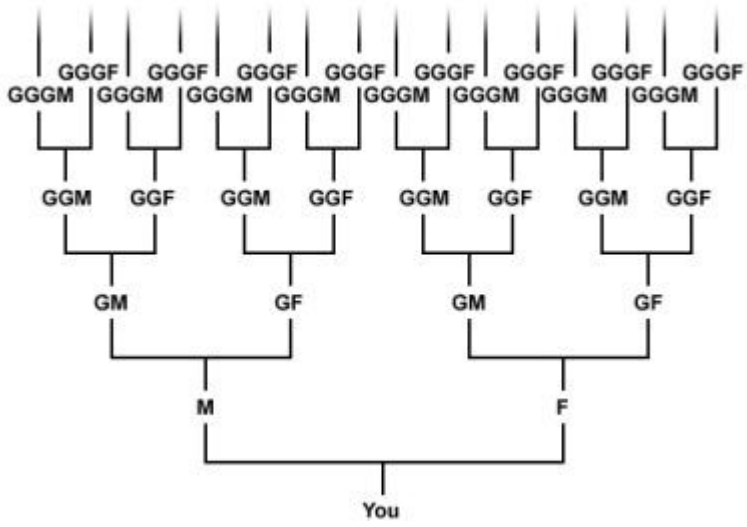
Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 128

Question: You have two biological parents. Each of these parents has two biological parents of their own (your grandparents). Each grandparent has two parents of their own, and so on. This set of relationships can be illustrated by a family tree, as shown in the illustration. (M stands for mother, F stands for father, and G stands for "great" or "grand." That is, GGF is a great-grandfather.)



The diagram shows that you have 16 great-great-grandparents in the 5th generation back. How many great-great-great-great-great-grandparents do you have? (That's all your grandparents in the 8th generation back, starting with you as the 1st.)

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 128.

Question 7b of 12 (3 Geometric Sequence Formulas 303668)

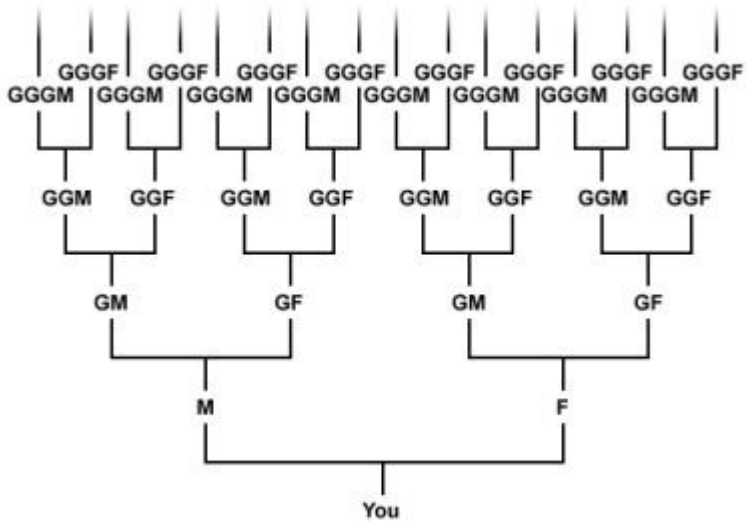
Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 256

Question: You have two biological parents. Each of these parents has two biological parents of their own (your grandparents). Each grandparent has two parents of their own, and so on. This set of relationships can be illustrated by a family tree, as shown in the illustration. (M stands for mother, F stands for father, and G stands for "great" or "grand." That is, GGF is a great-grandfather.)



The diagram shows that you have 16 great-great-grandparents in the 5th generation back. How many great-great-great-great-great-great-grandparents do you have? (That's all your grandparents in the 9th generation back, starting with you as the 1st.)

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 256.

Question 7c of 12 (3 Geometric Sequence Formulas 303669)

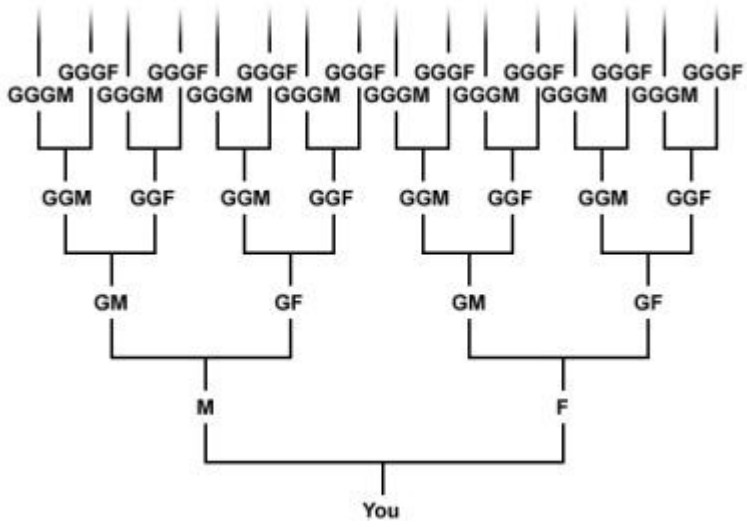
Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 512

Question: You have two biological parents. Each of these parents has two biological parents of their own (your grandparents). Each grandparent has two parents of their own, and so on. This set of relationships can be illustrated by a family tree, as shown in the illustration. (M stands for mother, F stands for father, and G stands for "great" or "grand." That is, GGF is a great-grandfather.)



The diagram shows that you have 16 great-great-grandparents in the 5th generation back. How many great-great-great-great-great-great-great-grandparents do you have? (That's all your grandparents in the 10th generation back, starting with you as the 1st.)

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 512.

Question 8a of 12 (2 Geometric Sequence Formulas 162835)

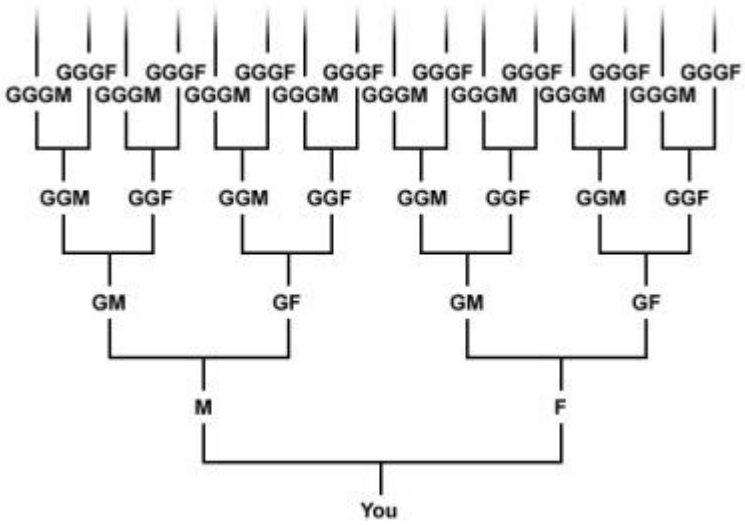
Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: An ancestor family tree shows that the farther you go back in time, the more ancestors you have. You have 16 great-great-grandparents in the 5th generation back, and you have about half a million ancestors who lived 500 years ago (the 20th generation back). The strange thing is, this makes it seem like the population of the world must be getting smaller, when we know it is actually getting bigger all the time.

Which choice explains what is wrong with using an ancestor family tree to argue that the population of the world used to be bigger than it is now?



	Choice	Feedback
A.	The ratio of the geometric sequence is $\frac{1}{2}$, not 2.	
B.	Geometric sequences cannot be extended backward in time.	
C.	Many of the ancestors have died.	
***D.**	The ancestor tree ignores the existence of brothers and sisters.	
E.	The first term of the geometric sequence cannot be determined.	

Global Incorrect Feedback
The correct answer is: The ancestor tree ignores the existence of brothers and sisters.

Question 8b of 12 (2 Geometric Sequence Formulas 303670)

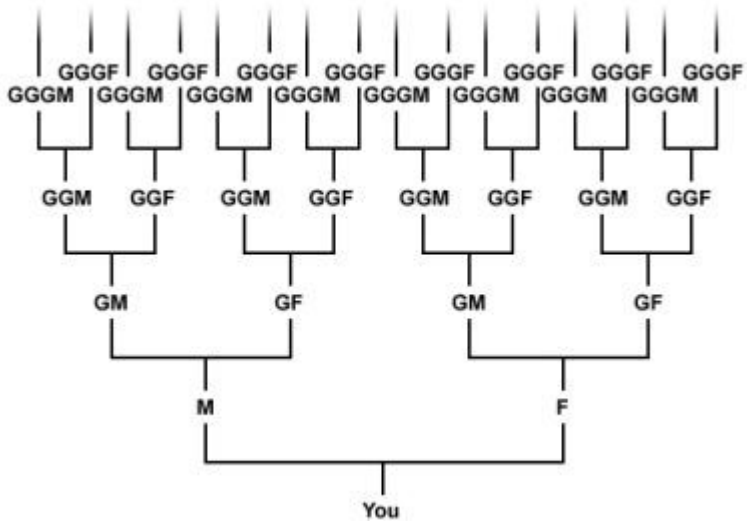
Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: An ancestor family tree shows that the farther you go back in time, the more ancestors you have. You have 16 great-great-grandparents in the 5th generation back, and you have about half a million ancestors who lived 500 years ago (the 20th generation back). The strange thing is, this makes it seem like the population of the world must be getting smaller, when we know it is actually getting bigger all the time.

Which choice explains what is wrong with using an ancestor family tree to argue that the population of the world used to be bigger than it is now?



	Choice	Feedback
A.	The ratio of the geometric sequence is $\frac{1}{2}$, not 2.	
B.	Geometric sequences cannot be extended backward in time.	
C.	Many of the ancestors have died.	
D.	The first term of the geometric sequence cannot be determined.	
***E.**	The ancestor tree ignores the existence of brothers and sisters.	

Global Incorrect Feedback
The correct answer is: The ancestor tree ignores the existence of brothers and sisters.

Question 8c of 12 (2 Geometric Sequence Formulas 303671)

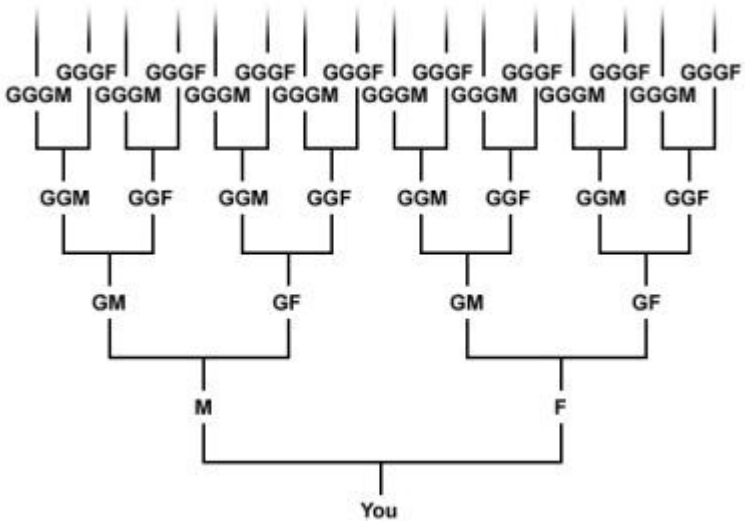
Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: An ancestor family tree shows that the farther you go back in time, the more ancestors you have. You have 16 great-great-grandparents in the 5th generation back, and you have about half a million ancestors who lived 500 years ago (the 20th generation back). The strange thing is, this makes it seem like the population of the world must be getting smaller, when we know it is actually getting bigger all the time.

Which choice explains what is wrong with using an ancestor family tree to argue that the population of the world used to be bigger than it is now?



	Choice	Feedback
*A.	The ancestor tree ignores the existence of brothers and sisters.	
B.	Geometric sequences cannot be extended backward in time.	
C.	Many of the ancestors have died.	
D.	The ratio of the geometric sequence is $\frac{1}{2}$, not 2.	
E.	The first term of the geometric sequence cannot be determined.	

Global Incorrect Feedback
The correct answer is: The ancestor tree ignores the existence of brothers and sisters.

Question 9a of 12 (3 Geometric Sequence Formulas 162836)

Maximum Attempts: 1

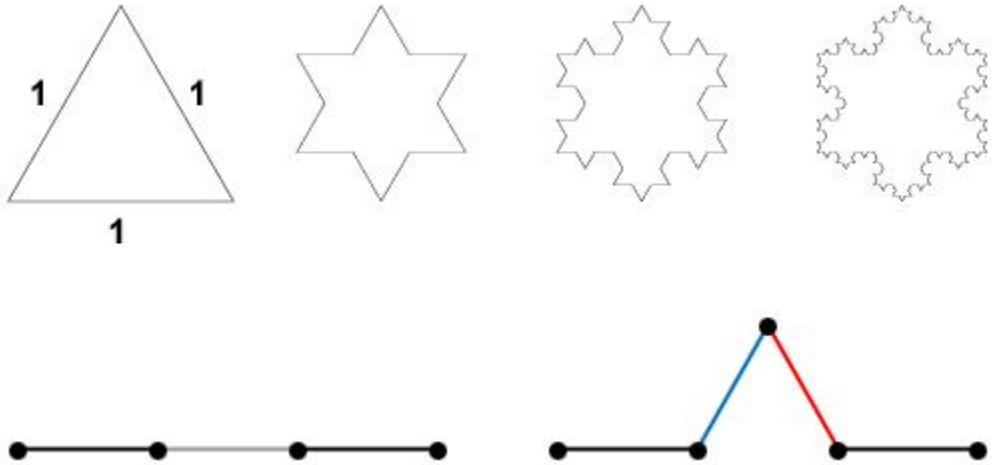
Question Type: Multiple Choice

Maximum Score: 2

Question: A fractal is a geometric figure that has similar characteristics at all levels of magnification. One example of a fractal is Koch's (sounds like "Cokes") snowflake. To build this fractal, start with an equilateral triangle whose sides each have length 1. Then on the middle $\frac{1}{3}$ of each side, create a triangular "bump" to make a new figure having 12 sides. On the middle $\frac{1}{3}$ of each of these 12 sides, create a

smaller bump, and so on. The upper part of the illustration shows the first four stages in the construction of a Koch's snowflake. The "real" snowflake is the result of carrying on this process forever!

The lower part of the illustration shows how, when a bump is added to any side, the length you have is multiplied by $\frac{4}{3}$. If a bump is added to every side of a snowflake figure, then the entire perimeter is multiplied by $\frac{4}{3}$.



Which of the following sequences represents the *total perimeter length* for each of the stages 1, 2, 3, 4, and so on (illustrated above) in building Koch's snowflake, starting with the equilateral triangle?

	Choice	Feedback
A.	3,12, 48, 192, ...	
B.	1, $\frac{4}{3}$, $\frac{16}{9}$, $\frac{64}{27}$, ...	
C.	4, 12, 36, 108, ...	
***D.**	3, 4, $\frac{16}{3}$, $\frac{64}{9}$, ...	
E.	3, $\frac{3}{2}$, $\frac{3}{4}$, $\frac{3}{8}$, ...	

Global Incorrect Feedback
The correct answer is: 3, 4, $\frac{16}{3}$, $\frac{64}{9}$, ...

Question 9b of 12 (3 Geometric Sequence Formulas 303672)

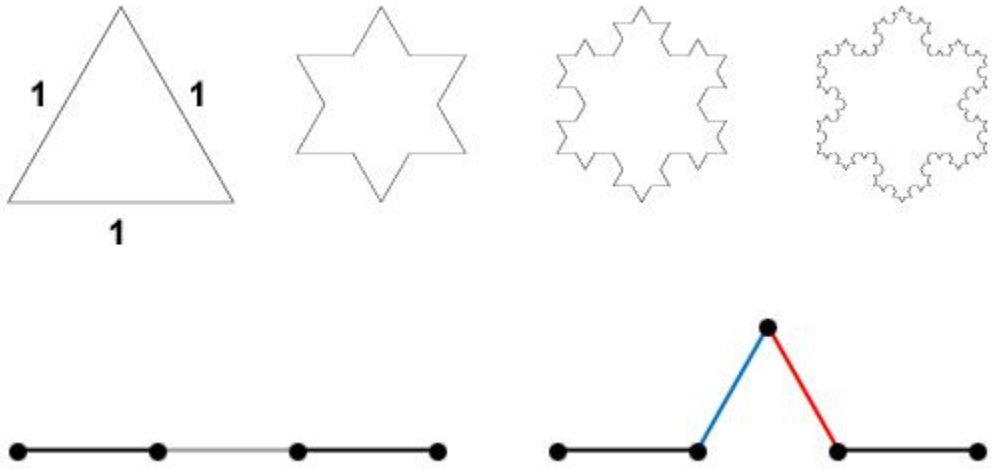
Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: A fractal is a geometric figure that has similar characteristics at all levels of magnification. One example of a fractal is Koch's (sounds like "Cokes") snowflake. To build this fractal, start with an equilateral triangle whose sides each have length 1. Then on the middle $\frac{1}{3}$ of each side, create a triangular "bump" to make a new figure having 12 sides. On the middle $\frac{1}{3}$ of each of these 12 sides, create a smaller bump, and so on. The upper part of the illustration shows the first four stages in the construction of a Koch's snowflake. The "real" snowflake is the result of carrying on this process forever!

The lower part of the illustration shows how, when a bump is added to any side, the length you have is multiplied by $\frac{4}{3}$. If a bump is added to every side of a snowflake figure, then the entire perimeter is multiplied by $\frac{4}{3}$.



Which of the following sequences represents the *total perimeter length* for each of the stages 1, 2, 3, 4, and so on (illustrated above) in building Koch's snowflake, starting with the equilateral triangle?

	Choice	Feedback
A.	3,12, 48, 192, ...	
***B.**	3, 4, $\frac{16}{3}$, $\frac{64}{9}$, ...	
C.	4, 12, 36, 108, ...	

D.	1, $\frac{4}{3}$, $\frac{16}{9}$, $\frac{64}{27}$, ...	
E.	3, $\frac{3}{2}$, $\frac{3}{4}$, $\frac{3}{8}$, ...	

Global Incorrect Feedback
The correct answer is: 3, 4, $\frac{16}{3}$, $\frac{64}{9}$, ...

Question 9c of 12 (3 Geometric Sequence Formulas 303673)

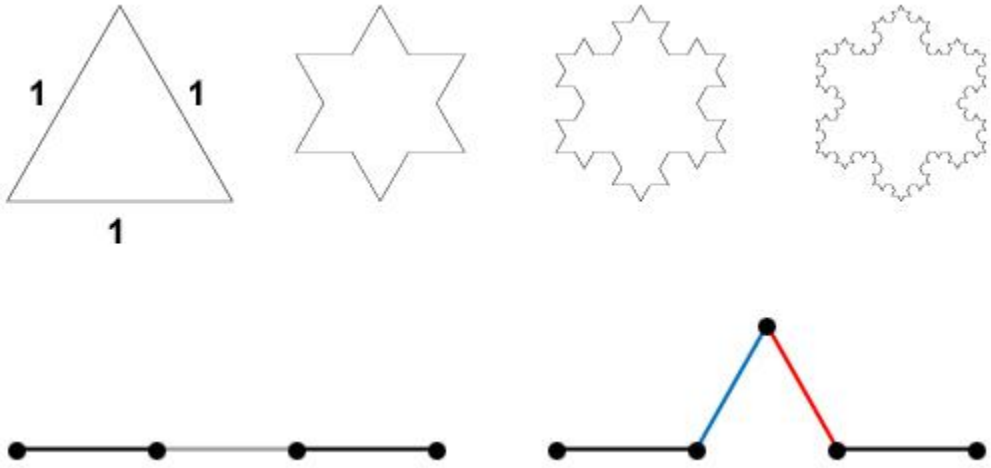
Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: A fractal is a geometric figure that has similar characteristics at all levels of magnification. One example of a fractal is Koch's (sounds like "Cokes") snowflake. To build this fractal, start with an equilateral triangle whose sides each have length 1. Then on the middle $\frac{1}{3}$ of each side, create a triangular "bump" to make a new figure having 12 sides. On the middle $\frac{1}{3}$ of each of these 12 sides, create a smaller bump, and so on. The upper part of the illustration shows the first four stages in the construction of a Koch's snowflake. The "real" snowflake is the result of carrying on this process forever!

The lower part of the illustration shows how, when a bump is added to any side, the length you have is multiplied by $\frac{4}{3}$. If a bump is added to every side of a snowflake figure, then the entire perimeter is multiplied by $\frac{4}{3}$.



Which of the following sequences represents the *total perimeter length* for each of the stages 1, 2, 3, 4, and so on (illustrated above) in building Koch's snowflake, starting with the equilateral triangle?

	Choice	Feedback
***A.**	3, 4, $\frac{16}{3}$, $\frac{64}{9}$, ...	
B.	1, $\frac{4}{3}$, $\frac{16}{9}$, $\frac{64}{27}$, ...	
C.	4, 12, 36, 108, ...	
D.	3,12, 48, 192, ...	
E.	3, $\frac{3}{2}$, $\frac{3}{4}$, $\frac{3}{8}$, ...	

Global Incorrect Feedback
The correct answer is: 3, 4, $\frac{16}{3}$, $\frac{64}{9}$, ...

Question 10a of 12 (3 Geometric Sequence Formulas 162846)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The geometric sequence that tells the perimeter of each stage in the building of Koch's snowflake has a first term of 3 and a ratio of $\frac{4}{3}$.

In the illustration of the previous problem, you saw the first four stages in the construction of a particular snowflake. At the 17th stage in the

construction of this snowflake, the length of each tiny side would be about the size of an atom! Using the explicit formula for the *n*th term of a geometric sequence, what is the length of the perimeter a_{17} to the nearest whole number?

	Choice	Feedback
*A.	299	
B.	100	
C.	399	
D.	133	
E.	99	

Global Incorrect Feedback
The correct answer is: 299.

Question 10b of 12 (3 Geometric Sequence Formulas 303674)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The geometric sequence that tells the perimeter of each stage in the building of Koch's snowflake has a first term of 3 and a ratio of $\frac{4}{3}$.

In the illustration of the previous problem, you saw the first four stages in the construction of a particular snowflake. At the 18th stage in the construction of this snowflake, the length of each tiny side would be about the size of an atom! Using the explicit formula for the *n*th term of a geometric sequence, what is the length of the perimeter a_{18} to the nearest whole number?

	Choice	Feedback
A.	299	
B.	200	
*C.	399	
D.	133	
E.	99	

Global Incorrect Feedback
The correct answer is: 399.

Question 10c of 12 (3 Geometric Sequence Formulas 303675)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The geometric sequence that tells the perimeter of each stage in the building of Koch's snowflake has a first term of 3 and a ratio of $\frac{4}{3}$.

In the illustration of the previous problem, you saw the first four stages in the construction of a particular snowflake. At the 16th stage in the construction of this snowflake, the length of each tiny side would be about the size of an atom! Using the explicit formula for the *n*th term of a geometric sequence, what is the length of the perimeter a_{16} to the nearest whole number?

	Choice	Feedback
A.	299	
B.	100	
C.	399	
***D.**	224	
E.	99	

Global Incorrect Feedback
The correct answer is: 224.

Question 11a of 12 (3 Geometric Sequence Formulas 162847)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following graphs of exponential functions correspond to a geometric sequence with ratio $\frac{1}{2}$?

Check all that apply.

Correct Answers:

	Choice
A.	Graph A
***B.**	Graph B
C.	Graph C
***D.**	Graph D

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: Graph B and Graph D.

Question 11b of 12 (3 Geometric Sequence Formulas 303676)

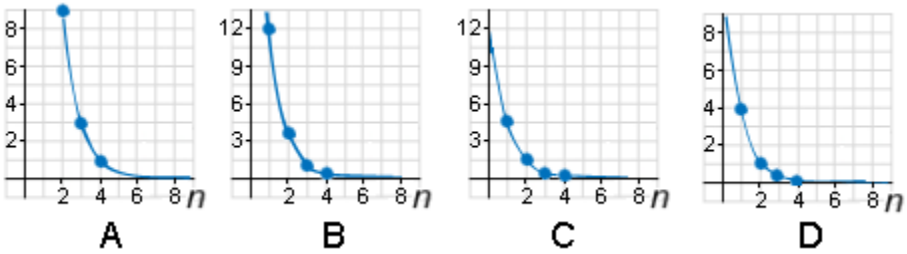
Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following graphs of exponential functions correspond to a geometric sequence with ratio $\frac{1}{3}$?

Check all that apply.



Correct Answers:

	Choice
***A.**	Graph A
***B.**	Graph B
C.	Graph C
D.	Graph D

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: Graph A and Graph B.

Question 11c of 12 (3 Geometric Sequence Formulas 303677)

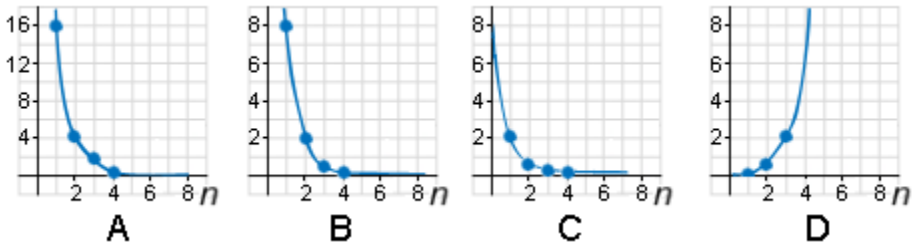
Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following graphs of exponential functions correspond to a geometric sequence with ratio $\frac{1}{4}$?

Check all that apply..



Correct Answers:

	Choice
A.	Graph A
***B.**	Graph B
***C.**	Graph C
D.	Graph D

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: Graph B and Graph C.

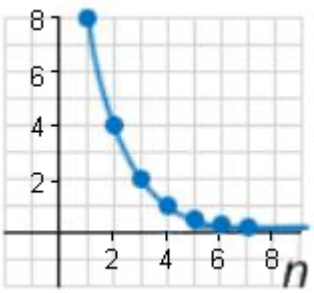
Question 12a of 12 (3 Geometric Sequence Formulas 162854)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Here is the graph of an exponential function corresponding to a geometric sequence.



Which choice shows the first term and the ratio of the sequence?

	Choice	Feedback
A.	First term = 4, ratio = $\frac{1}{2}$	
B.	First term = 8, ratio = 2	
***C.**	First term = 8, ratio = $\frac{1}{2}$	
D.	First term = 1, ratio = $\frac{1}{4}$	
E.	First term = 8, ratio = 2	

Global Incorrect Feedback
The correct answer is: First term = 8, ratio = $\frac{1}{2}$.

Question 12b of 12 (3 Geometric Sequence Formulas 303678)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Here is the graph of an exponential function corresponding to a geometric sequence.

Which choice shows the first term and the ratio of the sequence?

	Choice	Feedback
A.	First term = 3, ratio = $\frac{1}{9}$	
***B.**	First term = 9, ratio = $\frac{1}{3}$	

C.	First term = 9, ratio = 3	
D.	First term = 1, ratio = 9	
E.	First term = 3, ratio = 2	

Global Incorrect Feedback
The correct answer is: First term = 9, ratio = $\frac{1}{3}$.

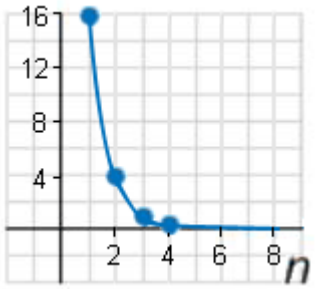
Question 12c of 12 (3 Geometric Sequence Formulas 303679)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Here is the graph of an exponential function corresponding to a geometric sequence.



Which choice shows the first term and the ratio of the sequence?

	Choice	**Feedback**
A.	First term = 16, ratio = $\frac{1}{2}$	
B.	First term = 8, ratio = $\frac{1}{4}$	
C.	First term = 16, ratio = $\frac{1}{2}$	
***D.**	First term = 16, ratio = $\frac{1}{4}$	
E.	First term = 1, ratio = 4	

Global Incorrect Feedback
The correct answer is: First term = 16, ratio = $\frac{1}{4}$.

PREVIEW CLOSE

Quiz: Applications of Arithmetic Sequences

Question 1a of 12 (2 Applications of Arithmetic Sequences 161749)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Ahmed is working at the burger joint. His boss pays him $6.50 per hour, and promises a raise of $0.25 per hour every six months. Which sequence describes his expected hourly wages, in dollars, starting with his current wage?

	Choice	Feedback
A.	0.25, 0.50, 0.75, 1.00, 1.25, ...	
B.	6.50, 13.00, 19.50, 26.00, 32.50, ...	
C.	6.75, 7.00, 7.25, 7.50, ...	
D.	6.50, 6.25, 6.00, 5.75, 5.50, ...	
***E.**	6.50, 6.75, 7.00, 7.25, 7.50, ...	

Global Incorrect Feedback
The correct answer is: 6.50, 6.75, 7.00, 7.25, 7.50, ...

Question 1b of 12 (2 Applications of Arithmetic Sequences 303694)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Ahmed is working at the burger joint. His boss pays him $7.50 per hour, and promises a raise of $0.25 per hour every six months. Which sequence describes his expected hourly wages, in dollars, starting with his current wage?

	Choice	Feedback
A.	0.25, 0.50, 0.75, 1.00, 1.25, ...	
B.	7.50, 15.00, 22.50, 30.00, 37.50, ...	
***C.**	7.50, 7.75, 8.00, 8.25, 8.50, ...	
D.	7.50, 7.25, 7.00, 6.75, 6.50, ...	
E.	7.75, 8.00, 8.25, 8.50, ...	

Global Incorrect Feedback
The correct answer is: 7.50, 7.75, 8.00, 8.25,

8.50, ...

Question 1c of 12 (2 Applications of Arithmetic Sequences 303695)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Ahmed is working at the burger joint. His boss pays him $5.50 per hour, and promises a raise of $0.25 per hour every six months. Which sequence describes his expected hourly wages, in dollars, starting with his current wage?

	Choice	Feedback
*A.	5.50, 5.75, 6.00, 6.25, 6.50, ...	
B.	5.50, 11.00, 16.50, 22.00, 27.50, ...	
C.	5.75, 6.00, 6.25, 6.50, ...	
D.	5.50, 5.25, 5.00, 4.75, 4.50, ...	
E.	0.25, 0.50, 0.75, 1.00, 1.25, ...	

Global Incorrect Feedback
The correct answer is: 5.50, 5.75, 6.00, 6.25, 6.50, ...

Question 2a of 12 (1 Applications of Arithmetic Sequences 161750)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following are explicit equations for the *n*th term of some kind of arithmetic sequence?

Check all that apply.

Correct Answers:

	Choice
A.	$x_n = x_{n-1} + v\Delta t$
*B.	$P_n = P_1 + (n-1)iP_1$
C.	$P_n = P_{n-1} + iP_1$
D.	$a_n = a_{n-1} + d$
*E.	$x_n = x_1 + (n-1)v\Delta t$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: $P_n = P_1 + (n-1)iP_1$ and $x_n = x_1 + (n-1)v\Delta t$.

Question 2b of 12 (1 Applications of Arithmetic Sequences 303696)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following are explicit equations for the *n*th term of some kind of arithmetic sequence?

Check all that apply.

Correct Answers:

	Choice
A.	$x_n = x_{n-1} + v\Delta t$
B.	$P_n = P_{n-1} + iP_1$
***C.**	$P_n = P_1 + (n-1)iP_1$
***D.**	$x_n = x_1 + (n-1)v\Delta t$
E.	$a_n = a_{n-1} + d$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: $P_n = P_1 + (n-1)iP_1$ and $x_n = x_1 + (n-1)v\Delta t$.

Question 2c of 12 (1 Applications of Arithmetic Sequences 303697)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following are explicit equations for the *n*th term of some kind of arithmetic sequence?

Check all that apply.

Correct Answers:

	Choice
*A.	$P_n = P_1 + (n-1)iP_1$
B.	$x_n = x_{n-1} + v\Delta t$
*C.	$x_n = x_1 + (n-1)v\Delta t$
D.	$a_n = a_{n-1} + d$
E.	$P_n = P_{n-1} + iP_1$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: $P_n = P_1 + (n-1)iP_1$ and $x_n = x_1 + (n-1)v\Delta t$.

Question 3a of 12 (1 Applications of Arithmetic Sequences 161756)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which of the following equations could you use to find the *n*th term of a simple-interest sequence?

	Choice	Feedback
A.	$x_n = x_1 + (n-1)v\Delta t$	
*B.	$P_n = P_1 + (n-1)iP_1$	
C.	$a_n = a_1 + nd$	
D.	$P_n = P_1(1+i)^{n-1}$	

E.	$a_n = a_1 r^{n-1}$	

Global Incorrect Feedback
The correct answer is: $P_n = P_1 + (n-1)iP_1$.

Question 3b of 12 (1 Applications of Arithmetic Sequences 303698)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which of the following equations could you use to find the *n*th term of a constant-velocity sequence?

	Choice	Feedback
***A.**	$x_n = x_1 + (n-1)v\Delta t$	
B.	$P_n = P_1 + (n-1)iP_1$	
C.	$a_n = a_1 + nd$	
D.	$P_n = P_1(1+i)^{n-1}$	
E.	$a_n = a_1 r^{n-1}$	

Global Incorrect Feedback
The correct answer is: $x_n = x_1 + (n-1)v\Delta t$.

Question 3c of 12 (1 Applications of Arithmetic Sequences 303699)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which of the following equations could you use to find the *n*th term of a simple-interest sequence?

	Choice	Feedback
A.	$x_n = x_1 + (n-1)v\Delta t$	
***B.**	$P_n = P_1 + (n-1)iP_1$	
C.	$a_n = a_1 + nd$	
D.	$P_n = P_1(1+i)^{n-1}$	
E.	$a_n = a_1 r^{n-1}$	

Global Incorrect Feedback
The correct answer is: $P_n = P_1 + (n-1)iP_1$.

Question 4a of 12 (3 Applications of Arithmetic Sequences 161762)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: What is the next term in the following constant-velocity sequence?

10 cm, 17 cm, 24 cm, ...

	Choice	Feedback
A.	20 cm	
B.	28 cm	
***C.**	31 cm	
D.	32 cm	
E.	35 cm	

Global Incorrect Feedback
The correct answer is: 31 cm.

Question 4b of 12 (3 Applications of Arithmetic Sequences 303700)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: What is the next term in the following constant-velocity sequence?

10 cm, 18 cm, 26 cm, ...

	Choice	Feedback
A.	20 cm	
B.	28 cm	
C.	31 cm	
D.	32 cm	
***E.**	34 cm	

Global Incorrect Feedback
The correct answer is: 34 cm.

Question 4c of 12 (3 Applications of Arithmetic Sequences 303701)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: What is the next term in the following constant-velocity sequence?

10 cm, 16 cm, 22 cm, ...

	Choice	Feedback
A.	20 cm	
***B.**	28 cm	
C.	31 cm	
D.	32 cm	
E.	35 cm	

Global Incorrect Feedback
The correct answer is: 28 cm.

Question 5a of 12 (2 Applications of Arithmetic Sequences 161763)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following are possible explicit formulas for the *n*th term of the constant-velocity sequence below?

Check all that apply.

10, 17, 24, 31, ...

Correct Answers:

	Choice
A.	$x_n = x_{n-1} + 7$
***B.**	$x_n = 10 + 7(n-1)$
***C.**	$x_n = x_1 + (n-1)v\Delta t$
D.	$x_n = 7(n-1)$
***E.**	$x_n = 3 + 7n$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: $x_n = 10 + 7(n-1)$, $x_n = x_1 + (n-1)v\Delta t$, and $x_n = 3 + 7n$.

Question 5b of 12 (2 Applications of Arithmetic Sequences 303702)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following are possible explicit formulas for the *n*th term of the constant-velocity sequence below?

Check all that apply.

10, 18, 26, 34, ...

Correct Answers:

	Choice
***A.**	$x_n = 10 + 8(n - 1)$
B.	$x_n = x_{n-1} + 8$
C.	$x_n = 8(n - 1)$
***D.**	$x_n = x_1 + (n-1)v\Delta t$
***E.**	$x_n = 2 + 8n$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: $x_n = 10 + 8(n - 1)$, $x_n = x_1 + (n-1)v\Delta t$, and $x_n = 2 + 8n$.

Question 5c of 12 (2 Applications of Arithmetic Sequences 303703)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following are possible explicit formulas for the *n*th term of the constant-velocity sequence below?

Check all that apply.

10, 16, 22, 28, ...

Correct Answers:

	Choice
***A.**	$x_n = 10 + 6(n - 1)$
B.	$x_n = x_{n-1} + 6$
***C.**	$x_n = x_1 + (n - 1)v\Delta t$
D.	$x_n = 6(n - 1)$
***E.**	$x_n = 4 + 6n$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: $x_n = 10 + 6(n - 1)$, $x_n = x_1 + (n - 1)v\Delta t$, and $x_n = 4 + 6n$.

Question 6a of 12 (3 Applications of Arithmetic Sequences 161769)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: You are playing paintball with a friend who is standing 25 meters away from you. You shoot at her and miss. The paintball has a horizontal velocity of 150 meters per second. Which of the following sequences describes the distances of the ball from you, in meters, at one-tenth second intervals, starting when it swooshes by her?

	Choice	Feedback
A.	15, 30, 45, 60, 75, ...	
B.	25, 175, 325, 475, 625, ...	
***C.**	25, 40, 55, 70, 85, ...	
D.	150, 300, 450, 600, 750, ...	
E.	15, 25, 35, 45, 55, ...	

Global Incorrect Feedback
The correct answer is: 25, 40, 55, 70, 85, ...

Question 6b of 12 (3 Applications of Arithmetic Sequences 303704)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: You are playing paintball with a friend who is standing 25 meters away from you. You shoot at her and miss. The paintball has a horizontal velocity of 200 meters per second. Which of the following sequences describes the distances of the ball from you, in meters, at one-tenth second intervals, starting when it swooshes by her?

	Choice	Feedback
A.	15, 30, 45, 60, 75, ...	
***B.**	25, 45, 65, 85, 105, ...	
C.	25, 225, 425, 625, 825, ...	
D.	150, 300, 450, 600, 750, ...	
E.	15, 35, 55, 75, 95, ...	

Global Incorrect Feedback
The correct answer is: 25, 45, 65, 85, 105, ...

Question 6c of 12 (3 Applications of Arithmetic Sequences 303705)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: You are playing paintball with a friend who is standing 15 meters away from you. You shoot at her and miss. The paintball has a horizontal velocity of 150 meters per second. Which of the following sequences describes the distances of the ball from you, in meters, at one-tenth second intervals, starting when it swooshes by her?

	Choice	Feedback
***A.**	15, 30, 45, 60, 75, ...	
B.	15, 165, 315, 465, 615, ...	
C.	30, 45, 60, 75, 90, ...	
D.	150, 300, 450, 600, 750, ...	
E.	15, 25, 35, 45, 55, ...	

Global Incorrect Feedback

The correct answer is: 15, 30, 45, 60, 75, ...

Question 7a of 12 (3 Applications of Arithmetic Sequences 161770)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 3328

Question: The Arctic tern is an amazing bird that migrates 22,000 miles from the North Pole to the South Pole every September (and back home every April). At dawn on a certain September day, one bird is flying due south past Lisbon, Portugal, a distance of 3,124 miles from his Arctic home. He is flying at a constant velocity of 17 miles per hour. How far, in miles, will he be from home at sunset, exactly 12 hours later?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 3,328.

Question 7b of 12 (3 Applications of Arithmetic Sequences 303706)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 3379

Question: The Arctic tern is an amazing bird that migrates 22,000 miles from the North Pole to the South Pole every September (and back home every April). At dawn on a certain September day, one bird is flying due south past Lisbon, Portugal, a distance of 3,124 miles from his Arctic home. He is flying at a constant velocity of 17 miles per hour. How far, in miles, will he be from home at sunset, exactly 15 hours later?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 3,379.

Question 7c of 12 (3 Applications of Arithmetic Sequences 303707)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 3294

Question: The Arctic tern is an amazing bird that migrates 22,000 miles from the North Pole to the South Pole every September (and back home every April). At dawn on a certain September day, one bird is flying due south past Lisbon, Portugal, a distance of 3,124 miles from his Arctic home. He is flying at a constant velocity of 17 miles per hour. How far, in miles, will he be from home at sunset, exactly 10 hours later?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 3,294.

Question 8a of 12 (3 Applications of Arithmetic Sequences 161504)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: A principal of $835 is invested in an account at 2 percent per quarter simple interest. Which of the following sequences describes the dollar amount of principal in the account at quarterly intervals?

Correct Answers:

	Choice
*A.	835.00, 851.70, 868.40, 885.10, 901.80, ...
B.	835.00, 901.80, 968.60, 1,035.40, 1,102.20, ...
C.	16.70, 33.40, 50.10, 66.80, 83.50, ...
D.	66.80, 133.60, 200.40, 267.20, 334.00, ...
E.	835.00, 851.70, 868.73, 886.11, 903.83, ...

Attempt	Incorrect Feedback

1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 835.00, 851.70, 868.40, 885.10, 901.80, ...

Question 8b of 12 (3 Applications of Arithmetic Sequences 303708)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: A principal of $835 is invested in an account at 3 percent per quarter simple interest. Which of the following sequences describes the dollar amount of principal in the account at quarterly intervals?

Correct Answers:

	Choice
A.	835.00, 860.05, 885.70, 911.15, 937.26, ...
B.	835.00, 901.80, 968.60, 1,035.40, 1,102.20, ...
C.	25.05, 50.10, 75.15, 100.20, 125.25, ...
D.	66.80, 133.60, 200.40, 267.20, 334.00, ...
***E.**	835.00, 860.05, 885.10, 910.15, 935.20, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 835.00, 860.05, 885.10, 910.15, 935.20, ...

Question 8c of 12 (3 Applications of Arithmetic Sequences 303709)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: A principal of $835 is invested in an account at 4 percent per quarter simple interest. Which of the following sequences describes the dollar amount of principal in the account at quarterly intervals?

Correct Answers:

	Choice
A.	835.00, 901.80, 968.60, 1,035.40, 1,102.20, ...
***B.**	835.00, 868.40, 901.80, 935.20, 968.60, ...
C.	33.40, 66.80, 100.20, 133.60, 167.00, ...
D.	66.80, 133.60, 200.40, 267.20, 334.00, ...
E.	835.00, 851.70, 868.73, 886.11, 903.83, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 835.00, 868.40, 901.80, 935.20, 968.60, ...

Question 9a of 12 (3 Applications of Arithmetic Sequences 161800)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 5461

Question: You decide to buy a 60-inch plasma-screen TV. To do so, you borrow $4,300 from the electronics store at 1.8 percent per month simple interest, with no payments due for two years from the date of purchase.

How much do you owe on the loan after 15 months? Round your answer to the nearest whole dollar.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: $5,461.

Question 9b of 12 (3 Applications of Arithmetic Sequences 303710)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 5655

Question: You decide to buy a 60-inch plasma-screen TV. To do so, you borrow $4,300 from the electronics store at 2.1 percent per month simple interest, with no payments due for two years from the date of purchase.

How much do you owe on the loan after 15 months? Round your answer to the nearest whole dollar.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: $5,655.

Question 9c of 12 (3 Applications of Arithmetic Sequences 303711)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 5783

Question: You decide to buy a 60-inch plasma-screen TV. To do so, you borrow $4,500 from the electronics store at 1.9 percent per month simple interest, with no payments due for two years from the date of purchase.

How much do you owe on the loan after 15 months? Round your answer to the nearest whole dollar.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: $5,783.

Question 10a of 12 (3 Applications of Arithmetic Sequences 161801)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 3

Question: Andrew thinks he has a good thing going. He invests $8,000 with the firm Dewey, Cheatham, and Howe, purchasing a CD (certificate of deposit) that after 10 years will be worth $10,400. The trouble is, Andrew did not consult his investment advisor before putting his money down, and this sneaky company has locked him into an investment that pays simple interest, not compound interest, on his principal.

What percent is the company's yearly interest rate? Round to the nearest whole number and do not include units in your answer.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 3.

Question 10b of 12 (3 Applications of Arithmetic Sequences 303712)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 2

Question: Andrew thinks he has a good thing going. He invests $8,000 with the firm Dewey, Cheatham, and Howe, purchasing a CD (certificate of deposit) that after 10 years will be worth $9,600. The trouble is, Andrew did not consult his investment advisor before putting his money down, and this sneaky company has locked him into an investment that pays simple interest, not compound interest, on his principal.

What percent is the company's yearly interest rate? Round to the nearest whole number and do not include units in your answer.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 2.

Question 10c of 12 (3 Applications of Arithmetic Sequences 303713)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 4

Question: Andrew thinks he has a good thing going. He invests $8,000 with the firm Dewey, Cheatham, and Howe, purchasing a CD (certificate of deposit) that after 10 years will be worth $11,200. The trouble is, Andrew did not consult his investment advisor before putting his money down, and this sneaky company has locked him into an investment that pays simple interest, not compound interest, on his principal.

What percent is the company's yearly interest rate? Round to the nearest whole number and do not include units in your answer.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 4.

Question 11a of 12 (1 Applications of Arithmetic Sequences 161802)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The loops of the spirals in the picture below are all spaced an equal distance apart for a given radius. What kind of spirals are they?

	Choice	Feedback
A.	Logarithmic spirals	
B.	Hyperbolic spirals	
C.	Spirals of Euclid	
***D.**	Spirals of Archimedes	
E.	Equiangular spirals	

Global Incorrect Feedback
The correct answer is: Spirals of Archimedes.

Question 11b of 12 (1 Applications of Arithmetic Sequences 303714)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The loops of the spirals in the picture below are all spaced an equal distance apart for a given radius. What kind of spirals are they?

	Choice	Feedback
A.	Logarithmic spirals	
B.	Hyperbolic spirals	
C.	Spirals of Euclid	
***D.**	Spirals of Archimedes	
E.	Equiangular spirals	

Global Incorrect Feedback
The correct answer is: Spirals of Archimedes.

Question 11c of 12 (1 Applications of Arithmetic Sequences 303715)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The loops of the spirals in the picture below are all spaced an equal distance apart for a given radius. What kind of spirals are they?

	Choice	Feedback
*A.	Spirals of Archimedes	
B.	Hyperbolic spirals	
C.	Spirals of Euclid	
D.	Logarithmic spirals	
E.	Equiangular spirals	

Global Incorrect Feedback
The correct answer is: Spirals of Archimedes.

Question 12a of 12 (3 Applications of Arithmetic Sequences 161804)

Maximum Attempts: 1

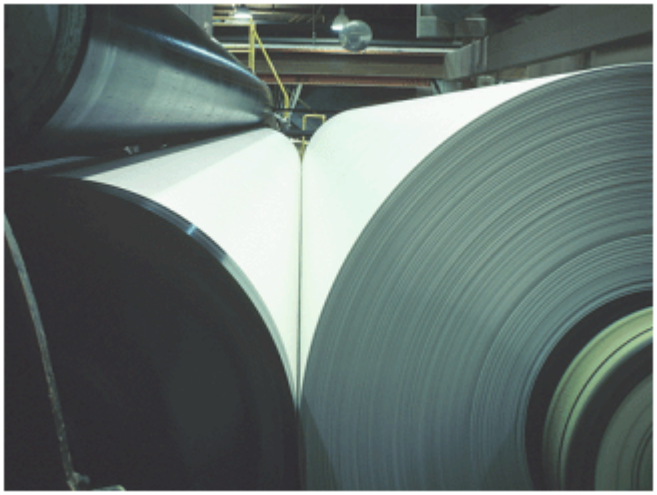
Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 34.72 - 34.74

Question: The newsprint that makes up the paper of newspapers is delivered to printing plants in giant rolls, like the one you see in the photograph. The paper is wound in a spiral in which every loop has exactly the same thickness. The first loop of the spiral starts at a distance of 27.335 centimeters from the center, and the paper has a thickness of 0.0074 centimeters.

How far, in centimeters, is the 1,000th loop of the spiral from the center of the roll? Round your answer to three decimal places.



Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 34.735.

Question 12b of 12 (3 Applications of Arithmetic Sequences 303716)

Maximum Attempts: 1

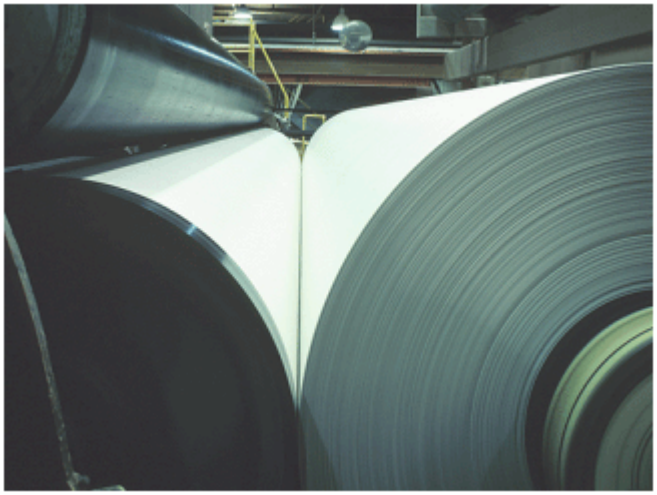
Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 36.72 - 36.74

Question: The newsprint that makes up the paper of newspapers is delivered to printing plants in giant rolls, like the one you see in the photograph. The paper is wound in a spiral in which every loop has exactly the same thickness. The first loop of the spiral starts at a distance of 29.335 centimeters from the center, and the paper has a thickness of 0.0074 centimeters.

How far, in centimeters, is the 1,000th loop of the spiral from the center of the roll? Round your answer to three decimal places.



Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 36.735.

Question 12c of 12 (3 Applications of Arithmetic Sequences 303717)

Maximum Attempts: 1

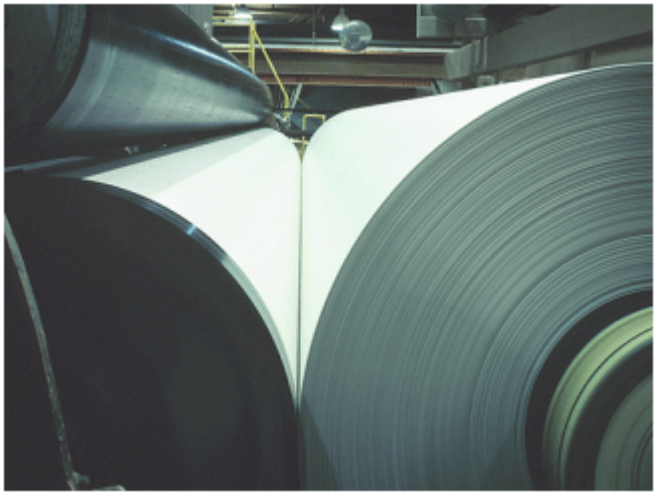
Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 32.72 - 32.74

Question: The newsprint that makes up the paper of newspapers is delivered to printing plants in giant rolls, like the one you see in the photograph. The paper is wound in a spiral in which every loop has exactly the same thickness. The first loop of the spiral starts at a distance of 25.335 centimeters from the center, and the paper has a thickness of 0.0074 centimeters.

How far, in centimeters, is the 1,000th loop of the spiral from the center of the roll? Round your answer to three decimal places.



Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 32.735.

PREVIEW CLOSE

Quiz: Applications of Geometric Sequences

Question 1a of 14 (2 Applications of Geometric Sequences 161806)

Maximum Attempts: 1
Question Type: Multiple Response
Maximum Score: 2
Question: Which of the following sequences are geometric sequences?

Check all that apply.

Correct Answers:

	Choice
A.	10, 11.23, 12.46, 13.69, 14.92, ...
***B.**	10, 11, 12.1, 13.31, 14.641, ...
C.	5, 10, 15, 20, 25, ...
***D.**	5, 25, 125, 625, 3,125, ...
***E.**	0.1, 0.01, 0.001, 0.0001, 0.00001, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: • 10, 11, 12.1, 13.31, 14.641, ... • 5, 25, 125, 625, 3,125, ... • 0.1, 0.01, 0.001, 0.0001, 0.00001, ...

Question 1b of 14 (2 Applications of Geometric Sequences 303809)

Maximum Attempts: 1
Question Type: Multiple Response
Maximum Score: 2
Question: Which of the following sequences are geometric sequences?

Check all that apply.

Correct Answers:

	Choice
***A.**	10, 12, 14.4, 17.28, 20.736, ...
B.	10, 11.5, 12.1, 13.66, 14.641, ...
***C.**	5, 10, 20, 40, 80, ...
D.	5, 25, 100, 200, 250, ...
***E.**	0.1, 0.01, 0.001, 0.0001, 0.00001, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: • 10, 12, 14.4, 17.28, 20.736, ... • 5, 10, 20, 40, 80, ... • 0.1, 0.01, 0.001, 0.0001, 0.00001, ...

Question 1c of 14 (2 Applications of Geometric Sequences 303811)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following sequences are geometric sequences?

Check all that apply.

Correct Answers:

	Choice
A.	10, 12, 13.1, 13.31, 15.641, ...
***B.**	10, 13, 16.9, 21.97, 28.561, 37.1293, ...

*C.	15, 30, 60, 120, 240, ...
D.	5, 125, 225, 1,625, 3,125, ...
*E.	0.1, 0.01, 0.001, 0.0001, 0.00001, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: • 10, 13, 16.9, 21.97, 28.561, 37.1293, ... • 15, 30, 60, 120, 240, ... • 0.1, 0.01, 0.001, 0.0001, 0.00001, ...

Question 2a of 14 (2 Applications of Geometric Sequences 161807)

Maximum Attempts: 1
Question Type: Numeric Fill In Blank
Maximum Score: 2
Correct Answer: 1.5
Question: What is the common ratio of the following geometric sequence?

25, 37.5, 56.25, 84.375, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 1.5.

Question 2b of 14 (2 Applications of Geometric Sequences 303812)

Maximum Attempts: 1
Question Type: Numeric Fill In Blank
Maximum Score: 2

Correct Answer: 1.7

Question: What is the common ratio of the following geometric sequence?

25, 42.5, 72.25, 122.825, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 1.7.

Question 2c of 14 (2 Applications of Geometric Sequences 303814)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 1.3

Question: What is the common ratio of the following geometric sequence?

25, 32.5, 42.25, 54.925, ...

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 1.3.

Question 3a of 14 (2 Applications of Geometric Sequences 161808)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: The following two geometric sequences have exactly the same common ratio, *r*.

3, 6, 12, 24, 48, ...

6, 12, 24, 48, 96, ...

	Choice	Feedback

*A.	True	
B.	False	

Global Incorrect Feedback
The correct answer is: True.

Question 3b of 14 (2 Applications of Geometric Sequences 303815)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: The following two geometric sequences have exactly the same common ratio, *r*.

3, 6, 12, 24, 48, ...

5, 11, 24.2, 53.24, 117.128, ...

	Choice	Feedback
A.	True	
*B.	False	

Global Incorrect Feedback
The correct answer is: False.

Question 3c of 14 (2 Applications of Geometric Sequences 303816)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: The following two geometric sequences have exactly the same common ratio, *r*.

3, 6, 12, 24, 48, ...

5, 10, 20, 40, 80, ...

	Choice	Feedback
*A.	True	
B.	False	

Global Incorrect Feedback
The correct answer is: True.

Question 4a of 14 (2 Applications of Geometric Sequences 161809)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which of the following equations could you use to find the *n*th term of a compound-interest sequence?

	Choice	Feedback
A.	$x_n = x_1 + (n - 1)v\Delta t$	
B.	$P_n = P_1 + (n - 1)iP_1$	
C.	$a_n = a_1 + nd$	
D.	$P_n = P_1 i^{n-1}$	
***E.**	$P_n = P_1(1+ i)^{n-1}$	

Global Incorrect Feedback
The correct answer is: $P_n = P_1(1+ i)^{n-1}$.

Question 4b of 14 (2 Applications of Geometric Sequences 303817)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which of the following equations could you use to find the *n*th term of a compound-interest sequence?

	Choice	Feedback
A.	$x_n = x_1 + (n - 1)v\Delta t$	
B.	$P_n = P_1 + (n - 1)iP_1$	
***C.**	$P_n = P_1(1+ i)^{n-1}$	
D.	$P_n = P_1 i^{n-1}$	
E.	$a_n = a_1 + nd$	

Global Incorrect Feedback
The correct answer is: $P_n = P_1(1+ i)^{n-1}$.

Question 4c of 14 (2 Applications of Geometric Sequences 303818)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Which of the following equations could you use to find the *n*th term of a compound-interest sequence?

	Choice	Feedback
*A.	$P_n = P_1(1+i)^{n-1}$	
B.	$P_n = P_1 + (n-1)iP_1$	
C.	$a_n = a_1 + nd$	
D.	$P_n = P_1 i^{n-1}$	
E.	$x_n = x_1 + (n-1)v\Delta t$	

Global Incorrect Feedback
The correct answer is: $P_n = P_1(1+i)^{n-1}$.

Question 5a of 14 (3 Applications of Geometric Sequences 161825)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Many credit card companies charge a compound interest rate of 1.8 per month on the balance on a credit card. Miriam owes $650 on a credit card. If she makes no purchases or payments, she will go more and more into debt. Which of the following sequences best describes her increasing monthly balances?

	Choice	Feedback
A.	650.00, 767.00, 905.06, 1,067.97, 1,260.21, ...	
B.	650.00, 661,70, 673.40, 685.10, 696.80, ...	
*C.	650.00, 661.70, 673.61, 685.74, 698.08, ...	
D.	650.00, 767.00, 884.00, 1,001.00, 1,118.00, ...	
E.	650.00, 650.18, 650.36, 650.54, 650.72, ...	

Global Incorrect Feedback
The correct answer is: 650.00, 661.70, 673.61, 685.74, 698.08, ...

Question 5b of 14 (3 Applications of Geometric Sequences 303819)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Many credit card companies charge a compound interest rate of 1.8 per month on the balance on a credit card. Miriam owes $750 on a credit card. If she makes no purchases or payments, she will go more and more into debt. Which of the following sequences best describes her increasing monthly balances?

	Choice	Feedback
A.	750.00, 885.00, 1,044.30, 1,232.27, 1,454.08, ...	
***B.**	750.00, 763.50, 777.24, 791.23, 805.48, ...	
C.	750.00, 763.50, 777.44, 791.83, 806.68, ...	
D.	750.00, 885.00, 1,044.30, 1,132.27, 1,354.08, ...	
E.	750.00, 750.18, 750.36, 750.54, 750.72, ...	

Global Incorrect Feedback
The correct answer is: 750.00, 763.50, 777.24, 791.23, 805.48, ...

Question 5c of 14 (3 Applications of Geometric Sequences 303820)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Many credit card companies charge a compound interest rate of 1.7 per month on the balance on a credit card. Miriam owes $650 on a credit card. If she makes no purchases or payments, she will go more and more into debt. Which of the following sequences best describes her increasing monthly balances?

	Choice	Feedback
A.	650.00, 767.00, 905.06, 1,067.97, 1,260.21, ...	
B.	650.00, 661.70, 673.61, 685.74, 698.08, ...	
***C.**	650.00, 661.05, 672.29, 683.72, 695.34, ...	
D.	650.00, 767.00, 884.00, 1,001.00, 1,118.00, ...	
E.	650.00, 650.17, 650.34, 650.51, 650.68, ...	

Global Incorrect Feedback
The correct answer is: 650.00, 661.05, 672.29,

683.71, 695.34, ...

Question 6a of 14 (3 Applications of Geometric Sequences 161826)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 8566379470

Question: One estimate of the population of the world on January 1, 2005, is 6,486,915,022. The population is estimated to be increasing at the rate of 1.4 percent per year. At this rate, what will the population of the world be on January 1, 2025? Round your answer to the nearest whole number.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 8,566,379,470.

Question 6b of 14 (3 Applications of Geometric Sequences 303821)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 8686308783

Question: One estimate of the population of the world on January 1, 2005, is 6,486,915,022. The population is estimated to be increasing at the rate of 1.4 percent per year. At this rate, what will the population of the world be on January 1, 2026? Round your answer to the nearest whole number.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 8,686,308,783.

Question 6c of 14 (3 Applications of Geometric Sequences 303822)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 8448105986

Question: One estimate of the population of the world on January 1, 2005, is 6,486,915,022. The population is estimated to be increasing at the rate of 1.4 percent per year. At this rate, what will the population of the world be on January 1, 2024? Round your answer to the nearest whole number.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 8,448,105,986.

Question 7a of 14 (3 Applications of Geometric Sequences 161827)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 3.5

Question: You invest $2,200 at an interest rate that is compounded annually. After 8 years, your principal has increased to $2,896.98. What percent is the interest rate?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 3.5.

Question 7b of 14 (3 Applications of Geometric Sequences 303824)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 4.5

Question: You invest $2,200 at an interest rate that is compounded annually. After 8 years, your principal has increased to $3,128.62. What percent is the interest rate?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 4.5.

Question 7c of 14 (3 Applications of Geometric Sequences 303826)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 2.5

Question: You invest $2,500 at an interest rate that is compounded annually. After 8 years, your principal has increased to $3,046.01. What percent is the interest rate?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 2.5.

Question 8a of 14 (1 Applications of Geometric Sequences 161830)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following statements are true about the logarithmic spirals below?

Check all that apply.

Correct Answers:

	Choice
***A.**	Each loop of each spiral intersects a radial line from the center at the same angle.
B.	The thickness of the spiral loops does not increase as the loops wind outward from the center.
C.	If you draw a radial line from the center, it will intersect the loops of each spiral at distances that make an arithmetic sequence.
D.	Each spiral has the shape that would be made by a tight coil of rope.
***E.**	These spirals grow in a pattern similar to that found in a chambered nautilus shell.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: Each loop of each

	spiral intersects a radial line from the center at the same angle, and These spirals grow in a pattern similar to that found in a chambered nautilus shell.

Question 8b of 14 (1 Applications of Geometric Sequences 303827)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following statements are true about the logarithmic spirals below?

Check all that apply.

Correct Answers:

	Choice
A.	The thickness of the spiral loops does not increase as the loops wind outward from the center.
***B.**	Each loop of each spiral intersects a radial line from the center at the same angle.
C.	If you draw a radial line from the center, it will intersect the loops of each spiral at distances that make an arithmetic sequence.

*D.	These spirals grow in a pattern similar to that found in a chambered nautilus shell.
E.	Each spiral has the shape that would be made by a tight coil of rope.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: Each loop of each spiral intersects a radial line from the center at the same angle, and These spirals grow in a pattern similar to that found in a chambered nautilus shell.

Question 8c of 14 (1 Applications of Geometric Sequences 303828)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following statements are true about the logarithmic spirals below?

Check all that apply.

Correct Answers:

	Choice
*A.	Each loop of each spiral intersects a radial line from the center at the same angle.
B.	The thickness of the spiral loops does not increase as the loops wind outward from the center.
*C.	These spirals grow in a pattern similar to that found in a chambered nautilus shell.
D.	Each spiral has the shape that would be made by a tight coil of rope.
E.	If you draw a radial line from the center, it will intersect the loops of each spiral at distances that make an arithmetic sequence.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: Each loop of each spiral intersects a radial line from the center at the same angle, and These spirals grow in a pattern similar to that found in a chambered nautilus shell.

Question 9a of 14 (3 Applications of Geometric Sequences 161831)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Yolanda finds a pretty (logarithmic) spiral seashell creature at the beach. Ever the scientist, she measures the distances of the first two loops of its spiral from the center and finds that they are 2 centimeters and 4 centimeters. The shell is not yet big enough to have a third loop, but she predicts that after a few years it will be at a distance of 8 centimeters along the same line. Maximilian disagrees, saying that the distance will be 6 centimeters. Who is right?

	Choice	Feedback

*A.	Yolanda	
B.	Maximilian	

Global Incorrect Feedback
The correct answer is: Yolanda.

Question 9b of 14 (3 Applications of Geometric Sequences 303829)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Yolanda finds a pretty (logarithmic) spiral seashell creature at the beach. Ever the scientist, she measures the distances of the first two loops of its spiral from the center and finds that they are 1 centimeter and 2 centimeters. The shell is not yet big enough to have a third loop, but she predicts that after a few years it will be at a distance of 4 centimeters along the same line. Maximilian disagrees, saying that the distance will be 3 centimeters. Who is right?

	Choice	Feedback
A.	Maximilian	
*B.	Yolanda	

Global Incorrect Feedback
The correct answer is: Yolanda.

Question 9c of 14 (3 Applications of Geometric Sequences 303830)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Yolanda finds a pretty (logarithmic) spiral seashell creature at the beach. Ever the scientist, she measures the distances of the first two loops of its spiral from the center and finds that they are 1.5 centimeters and 3 centimeters. The shell is not yet big enough to have a third loop, but she predicts that after a few years it will be at a distance of 4.5 centimeters along the same line. Maximilian disagrees, saying that the distance will be 6 centimeters. Who is right?

	Choice	Feedback
A.	Yolanda	
*B.	Maximilian	

Global Incorrect Feedback
The correct answer is: Yolanda.

Question 10a of 14 (3 Applications of Geometric Sequences 161833)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 12

Question: A fossil ammonite has the form of a logarithmic spiral. Yolanda, now a paleontologist, measures the distances of loops #2 and #4 along a radial line from the center of the spiral. She finds that the distances are 8 centimeters and 18 centimeters. The fossil is in poor condition, and she cannot measure the distance of loop #3 from the center. But she can calculate it. What is the distance in centimeters? Do not include units in your answer.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 12.

Question 10b of 14 (3 Applications of Geometric Sequences 303831)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 15

Question: A fossil ammonite has the form of a logarithmic spiral. Yolanda, now a paleontologist, measures the distances of loops #2 and #4 along a radial line from the center of the spiral. She finds that the distances are 10 centimeters and 22.5 centimeters. The fossil is in poor condition, and she cannot measure the distance of loop #3 from the center. But she can calculate it. What is the distance in centimeters? Do not include units in your answer.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 15.

Question 10c of 14 (3 Applications of Geometric Sequences 303832)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 9

Question: A fossil ammonite has the form of a logarithmic spiral. Yolanda, now a paleontologist, measures the distances of loops #2 and #4 along a radial line from the center of the spiral. She finds that the distances are 6 centimeters and 13.5 centimeters. The fossil is in poor condition, and she cannot measure the distance of loop #3 from the center. But she can calculate it. What is the distance in centimeters? Do not include units in your answer.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 9.

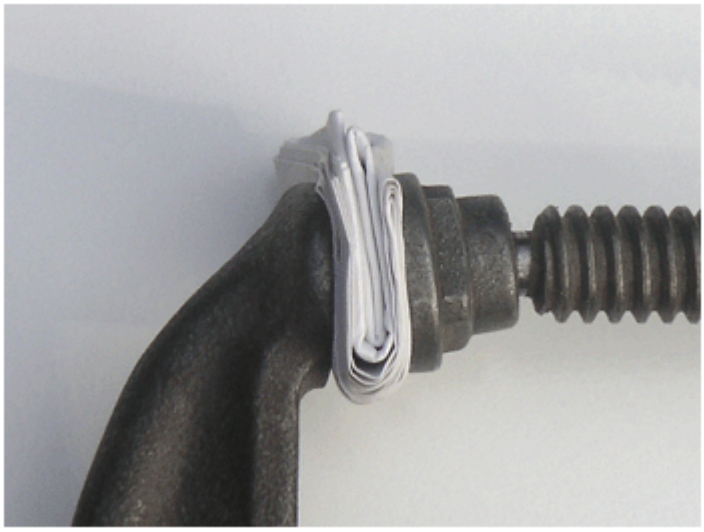
Question 11a of 14 (3 Applications of Geometric Sequences 161834)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Here's an experiment you can try. Start by folding an ordinary sheet of typing paper exactly in half. Then fold it in half again, then again, and so on. You will find that, try as you might, you can't fold it more than 6 times. If a single sheet of paper is .01 centimeters thick, how thick is the last, 6-fold wad of paper?



	Choice	Feedback
A.	0.32 centimeters	
B.	1.28 centimeters	
C.	0.6 centimeters	
***D.**	0.64 centimeters	
E.	0.064 centimeters	

Global Incorrect Feedback
The correct answer is: 0.64 centimeters.

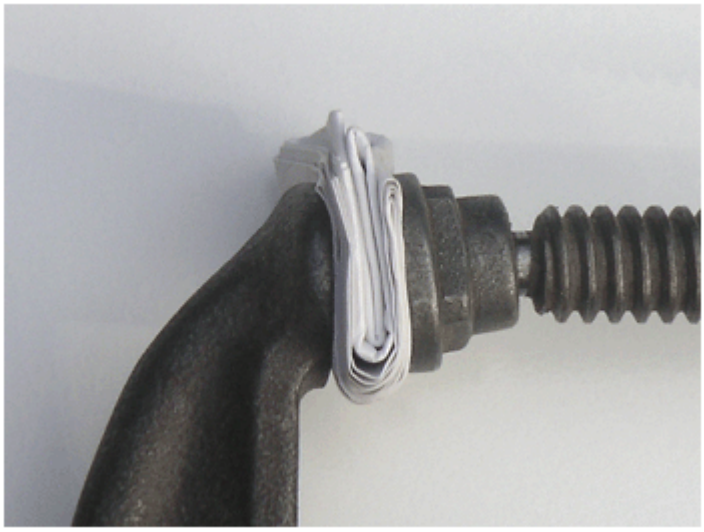
Question 11b of 14 (3 Applications of Geometric Sequences 303833)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Here's an experiment you can try. Start by folding an ordinary sheet of typing paper exactly in half. Then fold it in half again, then again, and so on. You will find that, try as you might, you can't fold it more than 6 times. If a single sheet of paper is .015 centimeters thick, how thick is the last, 6-fold wad of paper?



	Choice	Feedback
*A.	0.96 centimeters	
B.	1.28 centimeters	
C.	0.6 centimeters	
D.	0.64 centimeters	
E.	0.064 centimeters	

Global Incorrect Feedback
The correct answer is: 0.96 centimeters.

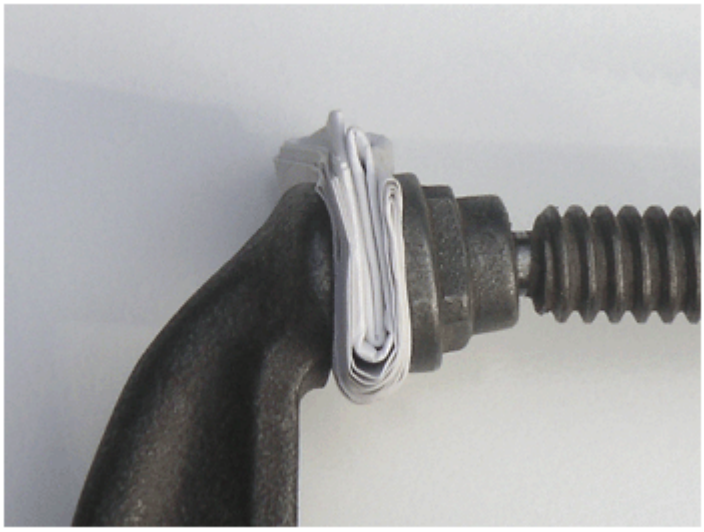
Question 11c of 14 (3 Applications of Geometric Sequences 303834)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Here's an experiment you can try. Start by folding an ordinary sheet of typing paper exactly in half. Then fold it in half again, then again, and so on. You will find that, try as you might, you can't fold it more than 6 times. If a single sheet of paper is .0125 centimeters thick, how thick is the last, 6-fold wad of paper?



	Choice	Feedback
A.	0.32 centimeters	
B.	1.6 centimeters	
C.	0.6 centimeters	
D.	0.08 centimeters	
***E.**	0.8 centimeters	

Global Incorrect Feedback
The correct answer is: 0.8 centimeters.

Question 12a of 14 (3 Applications of Geometric Sequences 161837)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 55

Question: A certain bacterial culture is multiplying in a culture dish, doubling in size every 5 minutes. It takes exactly an hour to fill the whole dish. How many minutes does it take to fill half the dish? Do not include units in your answer.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 55.

Question 12b of 14 (3 Applications of Geometric Sequences 303835)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 54

Question: A certain bacterial culture is multiplying in a culture dish, doubling in size every 6 minutes. It takes exactly an hour to fill the whole dish. How many minutes does it take to fill half the dish? Do not include units in your answer.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 54.

Question 12c of 14 (3 Applications of Geometric Sequences 303836)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 110

Question: A certain bacterial culture is multiplying in a culture dish, doubling in size every 10 minutes. It takes exactly two hours to fill the whole dish. How many minutes does it take to fill half the dish? Do not include units in your answer.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 110.

Question 13a of 14 (3 Applications of Geometric Sequences 161839)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The following geometric sequences represent the populations of two bacterial cultures after 0 hours, 1 hour, 2 hours, and so on. Culture A starts with more bacteria, but culture B has a ratio of increase that is twice as large. Which culture will have the greatest population after 10 hours?

Culture A: 1,000, 1,500, 2,250, 3,375, ...
Culture B: 1, 3, 9, 27, ...

	Choice	Feedback
A.	Culture A	
***B.**	Culture B	

Global Incorrect Feedback
The correct answer is: Culture B.

Question 13b of 14 (3 Applications of Geometric Sequences 303837)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The following geometric sequences represent the populations of two bacterial cultures after 0 hours, 1 hour, 2 hours, and so on. Culture A starts with more bacteria, but culture B has a ratio of increase that is twice as large. Which culture will have the greatest population after 10 hours?

Culture A: 1,000, 2,000, 4,000, 8,000, ...
Culture B: 1, 4, 16, 64, ...

	Choice	Feedback
A.	Culture A	
***B.**	Culture B	

Global Incorrect Feedback
The correct answer is: Culture B.

Question 13c of 14 (3 Applications of Geometric Sequences 303838)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The following geometric sequences represent the populations of two bacterial cultures after 0 hours, 1 hour, 2 hours, and so on. Culture A starts with more bacteria, but culture B has a ratio of increase that is

twice as large. Which culture will have the greatest population after 15 hours?

Culture A: 1,000, 1,500, 2,250, 3,375, ...
Culture B: 1, 3, 9, 27, ...

	Choice	Feedback
A.	Culture A	
***B.**	Culture B	

Global Incorrect Feedback
The correct answer is: Culture B.

Question 14a of 14 (3 Applications of Geometric Sequences 161840)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 2048

Question: In a famous story, a wise man in India requests a reward promised by his king. The wise man shows the king a chessboard having 64 squares. "Put 1 grain of rice on the first square, 2 grains on the second square, 4 on the third square, 8 on the fourth square, and so on. That will be my reward."

The king readily agrees, and is ruined because the total number of rice grains turns out to be about 37 trillion trillion trillion grains of rice ¶ much more than the value of the entire kingdom. How many grains of rice go in the 12th square?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 2,048.

Question 14b of 14 (3 Applications of Geometric Sequences 303839)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 4096

Question: In a famous story, a wise man in India requests a reward promised by

his king. The wise man shows the king a chessboard having 64 squares. "Put 1 grain of rice on the first square, 2 grains on the second square, 4 on the third square, 8 on the fourth square, and so on. That will be my reward."

The king readily agrees, and is ruined because the total number of rice grains turns out to be about 37 trillion trillion trillion grains of rice ¶ much more than the value of the entire kingdom. How many grains of rice go in the 13th square?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 4,096.

Question 14c of 14 (3 Applications of Geometric Sequences 303840)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 8192

Question: In a famous story, a wise man in India requests a reward promised by his king. The wise man shows the king a chessboard having 64 squares. "Put 1 grain of rice on the first square, 2 grains on the second square, 4 on the third square, 8 on the fourth square, and so on. That will be my reward."

The king readily agrees, and is ruined because the total number of rice grains turns out to be about 37 trillion trillion trillion grains of rice ¶ much more than the value of the entire kingdom. How many grains of rice go in the 14th square?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 8,192.

PREVIEW CLOSE

Quiz: Applications of Other Sequences

Question 1a of 10 (2 Applications of Other Sequences 161844)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: Which of the following is the pyramidal number sequence?

	Choice	Feedback
A.	1, 2, 4, 8, 16, ...	
B.	1, 4, 9, 16, 25, ...	
C.	1, 1, 2, 3, 5, ...	
D.	1, 3, 6, 10, 15, ...	
***E.**	1, 5, 14, 30, 55, ...	

Global Incorrect Feedback
The correct answer is: 1, 5, 14, 30, 55, ...

Question 1b of 10 (2 Applications of Other Sequences 303869)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: Which of the following is the pyramidal number sequence?

	Choice	Feedback
A.	1, 2, 4, 8, 16, ...	
B.	1, 4, 9, 16, 25, ...	
***C.**	1, 5, 14, 30, 55, ...	
D.	1, 3, 6, 10, 15, ...	
E.	1, 1, 2, 3, 5, ...	

Global Incorrect Feedback
The correct answer is: 1, 5, 14, 30, 55, ...

Question 1c of 10 (2 Applications of Other Sequences 303870)

Maximum Attempts: 1
Question Type: Multiple Choice

Maximum Score: 2

Question: Which of the following is the pyramidal number sequence?

	Choice	Feedback
***A.**	1, 5, 14, 30, 55, ...	
B.	1, 4, 9, 16, 25, ...	
C.	1, 1, 2, 3, 5, ...	
D.	1, 3, 6, 10, 15, ...	
E.	1, 2, 4, 8, 16, ...	

Global Incorrect Feedback
The correct answer is: 1, 5, 14, 30, 55, ...

Question 2a of 10 (2 Applications of Other Sequences 256336)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: The *n*th pyramidal number tells how many cannonballs there are in a square arrangement that has *n* cannonballs on a side.

	Choice	Feedback
A.	True	
***B.**	False	

Global Incorrect Feedback
The correct answer is: False.

Question 2b of 10 (2 Applications of Other Sequences 303871)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: The *n*th pyramidal number tells how many cannonballs there are in a square arrangement that is *n* cannonballs high.

	Choice	Feedback
A.	True	
***B.**	False	

Global Incorrect Feedback
The correct answer is: False.

Question 2c of 10 (2 Applications of Other Sequences 303872)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: The *n*th pyramidal number tells how many cannonballs there are in a square arrangement that is *n* cannonballs square.

	Choice	Feedback
A.	True	
***B.**	False	

Global Incorrect Feedback
The correct answer is: False.

Question 3a of 10 (2 Applications of Other Sequences 161850)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The *n*th pyramidal number tells how many balls there are in a pyramidal stack that is *n* layers tall. What kind of pyramid is the stack?

	Choice	Feedback
A.	A three-sided pyramid	
***B.**	A four-sided pyramid	
C.	A five-sided pyramid	
D.	A golden pyramid	
E.	A Fibonacci pyramid	

Global Incorrect Feedback
The correct answer is: A four-sided pyramid.

Question 3b of 10 (2 Applications of Other Sequences 303873)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The *n*th pyramidal number tells how many balls there are in a pyramidal stack that is *n* layers tall. What kind of pyramid is the stack?

	Choice	Feedback
***A.**	A four-sided pyramid	

B.	A three-sided pyramid	
C.	A five-sided pyramid	
D.	A golden pyramid	
E.	A Fibonacci pyramid	

Global Incorrect Feedback
The correct answer is: A four-sided pyramid.

Question 3c of 10 (2 Applications of Other Sequences 303874)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The *n*th pyramidal number tells how many balls there are in a pyramidal stack that is *n* layers tall. What kind of pyramid is the stack?

	Choice	**Feedback**
A.	A three-sided pyramid	
B.	A five-sided pyramid	
***C.**	A four-sided pyramid	
D.	A golden pyramid	
E.	A Fibonacci pyramid	

Global Incorrect Feedback
The correct answer is: A four-sided pyramid.

Question 4a of 10 (3 Applications of Other Sequences 161851)

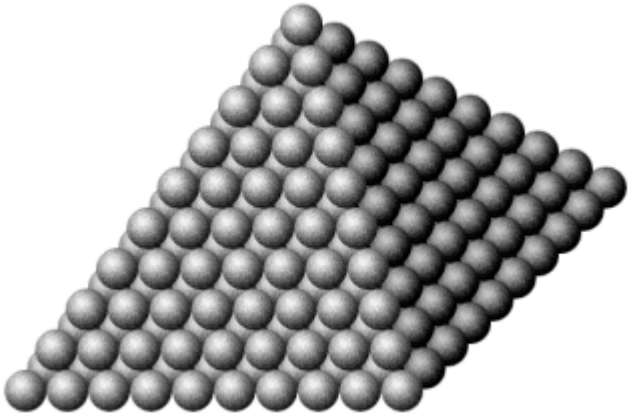
Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 385

Question: You are Miguel Cervantes de Navas y Colon, captain in the Royal Spanish Army in Sevilla in the year 1842. Outside your barracks window there is a stack of cannonballs, as shown in the illustration. On an idle afternoon you decide to calculate how many cannonballs are in the stack. What is the number of cannonballs?



Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 385.

Question 4b of 10 (3 Applications of Other Sequences 303875)

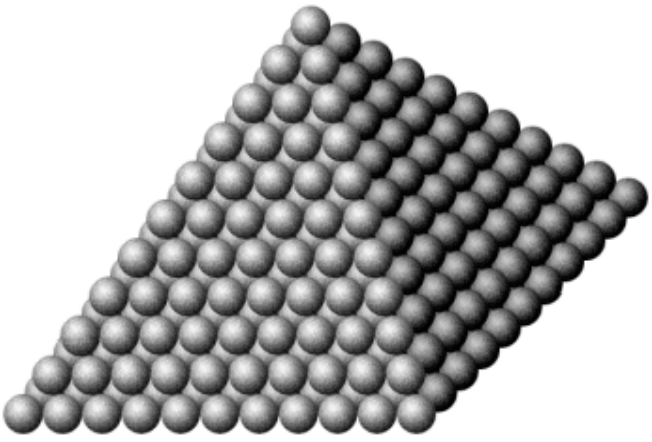
Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 506

Question: You are Miguel Cervantes de Navas y Colon, captain in the Royal Spanish Army in Sevilla in the year 1842. Outside your barracks window there is a stack of cannonballs, as shown in the illustration. On an idle afternoon you decide to calculate how many cannonballs are in the stack. What is the number of cannonballs?



Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 506.

Question 4c of 10 (3 Applications of Other Sequences 303876)

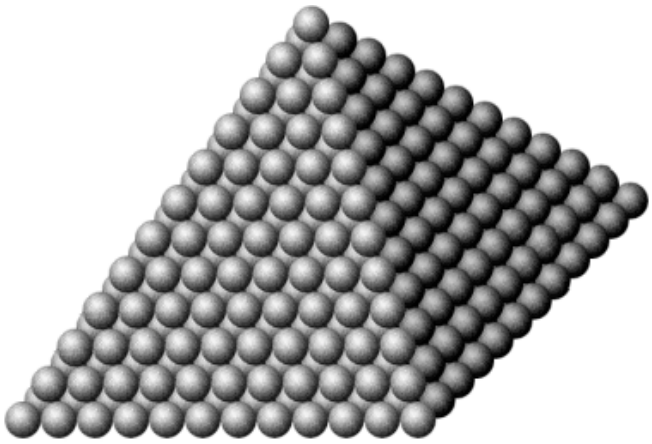
Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 650

Question: You are Miguel Cervantes de Navas y Colon, captain in the Royal Spanish Army in Sevilla in the year 1842. Outside your barracks window there is a stack of cannonballs, as shown in the illustration. On an idle afternoon you decide to calculate how many cannonballs are in the stack. What is the number of cannonballs?



Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 650.

Question 5a of 10 (3 Applications of Other Sequences 161853)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The 99th pyramidal number is 328,350. That would make quite a stack of basketballs! What number must you add to 328,350 to get the 100th pyramidal number?

	Choice	Feedback
A.	100	
B.	55	
C.	1,000	
D.	328,350*2*	
***E.**	10,000	

Global Incorrect Feedback
The correct answer is: 10,000.

Question 5b of 10 (3 Applications of Other Sequences 303877)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The 100th pyramidal number is 338,350. That would make quite a stack of basketballs! What number must you add to 338,350 to get the 101th pyramidal number?

	Choice	Feedback
A.	101	
B.	55	
***C.**	10,201	
D.	338,350*2*	
E.	1,100	

Global Incorrect Feedback
The correct answer is: 10,201.

Question 5c of 10 (3 Applications of Other Sequences 303878)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: The 98th pyramidal number is 318,549. That would make quite a stack of basketballs! What number must you add to 318,549 to get the 99th

pyramidal number?

	Choice	Feedback
A.	318,549	
B.	99	
C.	999	
***D.**	9,801	
E.	55	

Global Incorrect Feedback
The correct answer is: 9,801.

Question 6a of 10 (3 Applications of Other Sequences 161854)

Maximum Attempts: 1

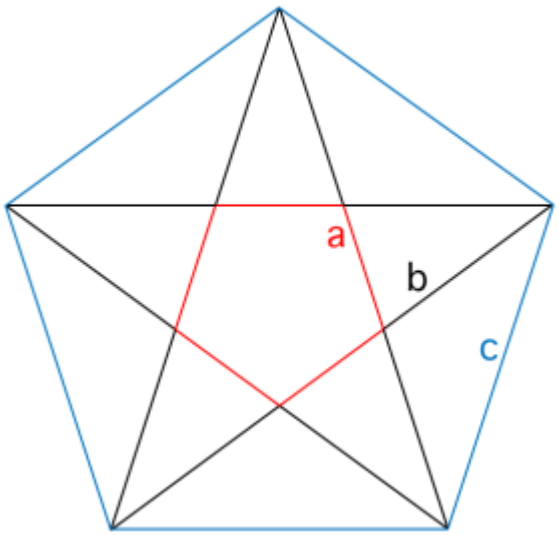
Question Type: Multiple Choice

Maximum Score: 2

Question: The diagram below shows a pentagram (a five-pointed star) inscribed inside a regular pentagon. There are several "golden" ratios in this figure. For example:

$$\frac{b}{a} = \varphi = 1.618 \quad \text{and} \quad \frac{c}{b} = \varphi = 1.618$$

This means that if the length $a = 1$, then the length $b = 1.618$. In this case, what is the length c?



	Choice	Feedback
A.	0.618	

B.	1.618	
***C.**	2.618	
D.	3.718	
E.	3.142	

Global Incorrect Feedback
The correct answer is: 2.618.

Question 6b of 10 (3 Applications of Other Sequences 303879)

Maximum Attempts: 1

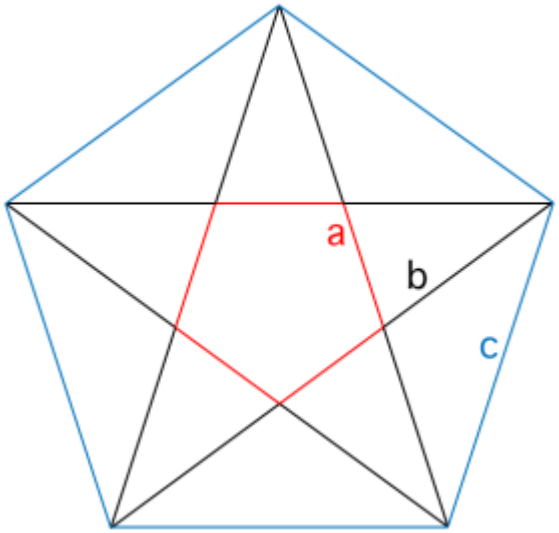
Question Type: Multiple Choice

Maximum Score: 2

Question: The diagram below shows a pentagram (a five-pointed star) inscribed inside a regular pentagon. There are several "golden" ratios in this figure. For example:

$$\frac{b}{a} = \varphi = 1.618 \quad \text{and} \quad \frac{c}{b} = \varphi = 1.618$$

This means that if the length $a = 2$, then the length $b = 3.236$. In this case, what is the length c?



	Choice	**Feedback**
A.	0.618	
B.	1.618	
C.	2.618	
***D.**	5.235	

E.	4.236	

Global Incorrect Feedback
The correct answer is: 5.235.

Question 6c of 10 (3 Applications of Other Sequences 303880)

Maximum Attempts: 1

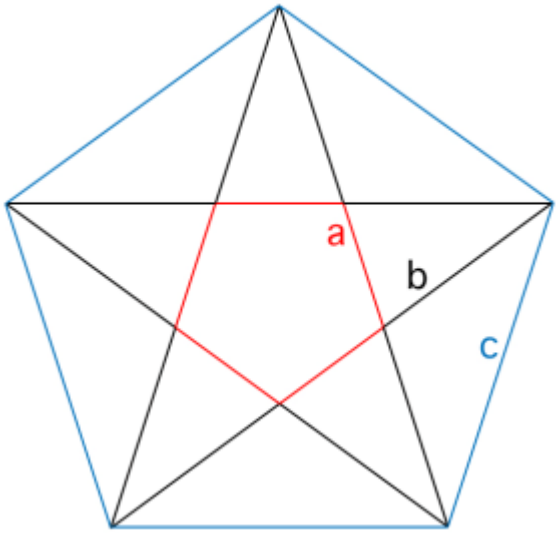
Question Type: Multiple Choice

Maximum Score: 2

Question: The diagram below shows a pentagram (a five-pointed star) inscribed inside a regular pentagon. There are several "golden" ratios in this figure. For example:

$$\frac{b}{a} = \varphi = 1.618 \quad \text{and} \quad \frac{c}{b} = \varphi = 1.618$$

This means that if the length a = 0.5, then the length b = 0.809. In this case, what is the length c?



	Choice	Feedback
***A.**	1.309	
B.	1.618	
C.	2.618	
D.	3.718	
E.	0.618	

Global Incorrect Feedback
The correct answer is: 1.309.

Question 7a of 10 (2 Applications of Other Sequences 161859)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Two large Fibonacci numbers are F_{50} = 12586269025 and F_{51} = 20365011074. If these two numbers are added, what Fibonacci number results?

	Choice	Feedback
A.	F_{49}	
B.	F_{50}	
C.	F_{51}	
***D.**	F_{52}	
E.	F_{53}	

Global Incorrect Feedback
The correct answer is: F_{52}.

Question 7b of 10 (2 Applications of Other Sequences 303881)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Two large Fibonacci numbers are F_{51} = 20365011074 and F_{52} = 32951280099. If these two numbers are added, what Fibonacci number results?

	Choice	Feedback
A.	F_{49}	
B.	F_{50}	
C.	F_{51}	
D.	F_{52}	
***E.**	F_{53}	

Global Incorrect Feedback
The correct answer is: F_{53}.

Question 7c of 10 (2 Applications of Other Sequences 303882)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Two large Fibonacci numbers are F_{49} = 7778742049 and F_{50} = 12586269025. If these two numbers are added, what Fibonacci number results?

	Choice	Feedback
A.	F_{49}	
B.	F_{50}	
***C.**	F_{51}	
D.	F_{52}	
E.	F_{53}	

Global Incorrect Feedback
The correct answer is: F_{51}.

Question 8a of 10 (2 Applications of Other Sequences 161860)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Two large Fibonacci numbers are F_{50} = 12586269025 and F_{51} = 20365011074.

What is the approximate value of the quotient $\frac{F_{51}}{F_{50}}$?

	Choice	Feedback
***A.**	1.618	
B.	2	
C.	2.618	
D.	0.618	
E.	3.142	

Global Incorrect Feedback
The correct answer is: 1.618.

Question 8b of 10 (2 Applications of Other Sequences 303883)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Two large Fibonacci numbers are F_{51} = 20365011074 and F_{52} = 32951280099.

What is the approximate value of the quotient $\frac{F_{52}}{F_{51}}$?

	Choice	Feedback
A.	0.618	
B.	2	
C.	2.618	
***D.**	1.618	
E.	3.142	

Global Incorrect Feedback
The correct answer is: 1.618.

Question 8c of 10 (2 Applications of Other Sequences 303884)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Two large Fibonacci numbers are F_{49} = 7778742049 and F_{50} = 12586269025.

What is the approximate value of the quotient $\frac{F_{50}}{F_{49}}$?

	Choice	Feedback
A.	2	
***B.**	1.618	
C.	2.618	
D.	0.618	
E.	3.142	

Global Incorrect Feedback
The correct answer is: 1.618.

Question 9a of 10 (2 Applications of Other Sequences 161861)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: The table below shows the first 16 terms of the Fibonacci sequence. Based on these numbers, which of the statements below are true about

the Fibonacci sequence?

Check all that apply.

Fibonacci Terms 1-8								
N	1	2	3	4	5	6	7	8
F_n	1	1	2	3	5	8	13	21
Fibonacci Terms 9-16								
N	9	10	11	12	13	14	15	16
F_n	34	55	89	144	233	377	610	987

Correct Answers:

	Choice
*A.	The fourth Fibonacci number is 3. Every fourth Fibonacci number after that is evenly divisible by 3.
B.	The Fibonacci numbers follow the pattern odd, odd, even, even, odd, odd, even, even, ...
*C.	Starting with F_{11}, the difference between any Fibonacci number and the Fibonacci number that comes 10 before it (for example, F_{37} - F_{27}) is a number evenly divisible by 11.
*D.	The sum of the first n Fibonacci numbers is always exactly 1 less than another Fibonacci number.
E.	The quotient of every neighboring pair of Fibonacci numbers is exactly 1.618.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback

	The correct answers are: • The fourth Fibonacci number is 3. Every fourth Fibonacci number after that is evenly divisible by 3. • Starting with F_{11}, the difference between any Fibonacci number and the Fibonacci number that comes 10 before it (for example, F_{37} - F_{27}) is a number evenly divisible by 11. • The sum of the first *n* Fibonacci numbers is always exactly 1 less than another Fibonacci number.

Question 9b of 10 (2 Applications of Other Sequences 303885)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: The table below shows the first 16 terms of the Fibonacci sequence. Based on these numbers, which of the statements below are true about the Fibonacci sequence?

Check all that apply.

Fibonacci Terms 1-8								
N	1	2	3	4	5	6	7	8
F_n	1	1	2	3	5	8	13	21
Fibonacci Terms 9-16								
N	9	10	11	12	13	14	15	16
F_n	34	55	89	144	233	377	610	987

Correct Answers:

	Choice
A.	The Fibonacci numbers follow the pattern odd, odd, even, even, odd, odd, even, even, ...
***B.**	The fourth Fibonacci number is 3. Every fourth Fibonacci number after that is evenly divisible by 3.

***C.**	Starting with F_{11}, the difference between any Fibonacci number and the Fibonacci number that comes 10 before it (for example, F_{37} - F_{27}) is a number evenly divisible by 11.
D.	The quotient of every neighboring pair of Fibonacci numbers is exactly 1.618.
***E.**	The sum of the first *n* Fibonacci numbers is always exactly 1 less than another Fibonacci number.

Attempt	**Incorrect Feedback**
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: • The fourth Fibonacci number is 3. Every fourth Fibonacci number after that is evenly divisible by 3. • Starting with F_{11}, the difference between any Fibonacci number and the Fibonacci number that comes 10 before it (for example, F_{37} - F_{27}) is a number evenly divisible by 11. • The sum of the first *n* Fibonacci numbers is always exactly 1 less than another Fibonacci number.

Question 9c of 10 (2 Applications of Other Sequences 303886)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: The table below shows the first 16 terms of the Fibonacci sequence. Based on these numbers, which of the statements below are true about the Fibonacci sequence?

Check all that apply.

Fibonacci Terms 1-8								
N	1	2	3	4	5	6	7	8
F_n	1	1	2	3	5	8	13	21
Fibonacci Terms 9-16								
N	9	10	11	12	13	14	15	16
F_n	34	55	89	144	233	377	610	987

Correct Answers:

	Choice
***A.**	The fourth Fibonacci number is 3. Every fourth Fibonacci number after that is evenly divisible by 3.
B.	The Fibonacci numbers follow the pattern odd, odd, even, even, odd, odd, even, even, ...
***C.**	Starting with F_{11}, the difference between any Fibonacci number and the Fibonacci number that comes 10 before it (for example, F_{37} - F_{27}) is a number evenly divisible by 11.
D.	The quotient of every neighboring pair of Fibonacci numbers is exactly 1.618.
***E.**	The sum of the first n Fibonacci numbers is always exactly 1 less than another Fibonacci number.

Attempt	**Incorrect Feedback**
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: • The fourth Fibonacci number is 3. Every fourth Fibonacci number after that is

	evenly divisible by 3. • Starting with F_{11}, the difference between any Fibonacci number and the Fibonacci number that comes 10 before it (for example, F_{37} - F_{27}) is a number evenly divisible by 11. • The sum of the first *n* Fibonacci numbers is always exactly 1 less than another Fibonacci number.

Question 10a of 10 (2 Applications of Other Sequences 161863)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Count the left-handed and right-handed spirals on the cactus in the photograph. The numbers you get should be two neighboring terms in the Fibonacci sequence. What are the numbers?

	Choice	Feedback
A.	5 and 8	
B.	8 and 13	
***C.**	13 and 21	
D.	21 and 34	
E.	34 and 55	

Global Incorrect Feedback

The correct answer is: 13 and 21.

Question 10b of 10 (2 Applications of Other Sequences 303887)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Count the left-handed and right-handed spirals on the cactus in the photograph. The numbers you get should be two neighboring terms in the Fibonacci sequence. What are the numbers?

	Choice	Feedback
A.	5 and 8	
B.	8 and 13	
***C.**	13 and 21	
D.	21 and 34	
E.	34 and 55	

Global Incorrect Feedback
The correct answer is: 13 and 21.

Question 10c of 10 (2 Applications of Other Sequences 303888)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Count the left-handed and right-handed spirals on the cactus in the photograph. The numbers you get should be two neighboring terms in the Fibonacci sequence. What are the numbers?

	Choice	Feedback
A.	5 and 8	
B.	8 and 13	
***C.**	13 and 21	
D.	21 and 34	
E.	34 and 55	

Global Incorrect Feedback
The correct answer is: 13 and 21.

PREVIEW CLOSE

Quiz: Arithmetic Series

Question 1a of 14 (2 Arithmetic Series 163140)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: Here is a series written in summation notation:

$$\sum_{i=1}^{50} 2^{2i}$$

Which of the following sums is an expansion of this series?

	Choice	Feedback
A.	$4 + 16 + 64 + \ldots + 2^{50}$	
B.	$2 + 4 + 8 + \ldots + 2^{100}$	
***C.**	$4 + 16 + 64 + \ldots + 2^{100}$	
D.	$2 + 4 + 8 + \ldots + 2^{50}$	
E.	$2 + 4 + 6 + \ldots + 100$	

Global Incorrect Feedback
The correct answer is: $4 + 16 + 64 + \ldots + 2^{100}$.

Question 1b of 14 (2 Arithmetic Series 303899)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: Here is a series written in summation notation:

$$\sum_{i=1}^{100} 2^{i}$$

Which of the following sums is an expansion of this series?

	Choice	Feedback
A.	$4 + 16 + 64 + \ldots + 2^{50}$	
***B.**	$2 + 4 + 8 + \ldots + 2^{100}$	
C.	$4 + 16 + 64 + \ldots + 2^{100}$	
D.	$2 + 4 + 8 + \ldots + 2^{50}$	
E.	$2 + 4 + 6 + \ldots + 100$	

Global Incorrect Feedback
The correct answer is: $2 + 4 + 8 + \ldots + 2^{100}$.

Question 1c of 14 (2 Arithmetic Series 303900)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Here is a series written in summation notation:

$$\sum_{i=1}^{25} 2^{2i}$$

Which of the following sums is an expansion of this series?

	Choice	Feedback
***A.**	$4 + 16 + 64 + \ldots + 2^{50}$	
B.	$2 + 4 + 8 + \ldots + 2^{100}$	
C.	$4 + 16 + 64 + \ldots + 2^{100}$	
D.	$2 + 4 + 8 + \ldots + 2^{50}$	
E.	$2 + 4 + 6 + \ldots + 100$	

Global Incorrect Feedback
The correct answer is: $4 + 16 + 64 + \ldots + 2^{50}$.

Question 2a of 14 (2 Arithmetic Series 163142)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Here is a series written in expanded form:

$3 + 8 + 13 + \ldots + 28$

Which of the following summation notations represents this series?

	Choice	Feedback
A.	$\sum_{i=1}^{5} 3i$	
B.	$\sum_{i=1}^{6} 4i - 1$	

C.	$\sum_{i=1}^{5} 5i-2$	
***D.**	$\sum_{i=1}^{6} 5i-2$	
E.	$\sum_{1}^{i=4} i+2$	

Global Incorrect Feedback
The correct answer is: $\sum_{i=1}^{6} 5i-2$.

Question 2b of 14 (2 Arithmetic Series 303901)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: Here is a series written in expanded form:

3 + 8 + 13 + ... + 23

Which of the following summation notations represents this series?

	Choice	**Feedback**
A.	$\sum_{i=1}^{5} 3i$	
B.	$\sum_{i=1}^{6} 4i-1$	
***C.**	$\sum_{i=1}^{5} 5i-2$	
D.	$\sum_{i=1}^{6} 5i-2$	
E.	$\sum_{1}^{i=4} i+2$	

Global Incorrect Feedback
The correct answer is: $\sum_{i=1}^{5} 5i-2$.

Question 2c of 14 (2 Arithmetic Series 303902)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: Here is a series written in expanded form:

3 + 8 + 13 + ... + 33

Which of the following summation notations represents this series?

	Choice	Feedback
*A.	$\sum_{i=1}^{7} 5i-2$	
B.	$\sum_{i=1}^{6} 4i-1$	
C.	$\sum_{i=1}^{5} 3i$	
D.	$\sum_{i=1}^{6} 5i-2$	
E.	$\sum_{1}^{i=4} i+2$	

Global Incorrect Feedback
The correct answer is: $\sum_{i=1}^{7} 5i-2$.

Question 3a of 14 (2 Arithmetic Series 163148)

Maximum Attempts: 1
Question Type: True-False
Maximum Score: 2
Question: True or false?

$$n! = \sum_{i=1}^{n} i$$

	Choice	Feedback
A.	True	
*B.	False	

Global Incorrect Feedback
The correct answer is: False.

Question 3b of 14 (2 Arithmetic Series 303903)

Maximum Attempts: 1
Question Type: True-False
Maximum Score: 2
Question: True or false?

	Choice	Feedback
A.	True	
***B.**	False	

Global Incorrect Feedback
The correct answer is: False.

Question 3c of 14 (2 Arithmetic Series 303904)

Maximum Attempts: 1
Question Type: True-False
Maximum Score: 2
Question: True or false?

	Choice	Feedback
A.	True	
***B.**	False	

Global Incorrect Feedback
The correct answer is: False.

Question 4a of 14 (2 Arithmetic Series 163172)

Maximum Attempts: 1
Question Type: Multiple Response
Maximum Score: 2
Question: Which of the following is a series?

Check all that apply.

Correct Answers:

	Choice

*A.	$\sum_{k=7}^{20} 3k$
B.	1 • 2 • 3 • 4 • 5 • 6 • 7 • 8
*C.	$\frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16} +$ 3.14159
*D.	-5 - 10 - 15 - ... - 125
*E.	$\sum_{i=1}^{16} 5$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: • $\sum_{k=7}^{20} 3k$ • $\frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16}$ + 3.14159 • -5 - 10 - 15 - ... - 125 • $\sum_{i=1}^{16} 5$

Question 4b of 14 (2 Arithmetic Series 303905)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following is a series?

Check all that apply.

Correct Answers:

	Choice
*A.	$\sum_{j=1}^{100} (j-1)^2$
*B.	1 + 2 + 3 + 4 + 5 + 6 + 7 + 8

*C.	$\sum_{j=1}^{60} 5$
*D.	-5 - 10 - 15 - ... - 125
E.	$\frac{1}{2}$. $\frac{1}{4}$. $\frac{1}{8}$. $\frac{1}{16}$. 3.14159

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: • $\sum_{j=1}^{100}(j-1)^2$ • 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 • $\sum_{j=1}^{60} 5$ • -5 - 10 - 15 - ... - 125

Question 4c of 14 (2 Arithmetic Series 303906)

Maximum Attempts: 1

Question Type: Multiple Response

Maximum Score: 2

Question: Which of the following is a series?

Check all that apply.

Correct Answers:

	Choice
*A.	$\sum_{k=7}^{20} 3k$
*B.	-1 - 2 - 3 - 4 - 5 - 6 - 7 - 8
*C.	$\frac{1}{2}$ + $\frac{1}{4}$ + $\frac{1}{8}$ + $\frac{1}{16}$ + 3.14159
D.	5 • 10 • 15 • ... • 125

*E.	$\sum_{i=1}^{16} 5$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answers are: • $\sum_{k=7}^{20} 3k$ • -1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 • $\frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16} + 3.14159$ • $\sum_{i=1}^{16} 5$

Question 5a of 14 (3 Arithmetic Series 163180)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 72

Question: Expand and evaluate the following series, where $n = 4$ and $a_i = 2 \cdot i^2 + 3$. What is the sum?

$$\sum_{i=1}^{n} a_i$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 72.

Question 5b of 14 (3 Arithmetic Series 303907)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 204

Question: Expand and evaluate the following series, where $n = 4$ and $a_i = 2 \cdot i^3 + 1$. What is the sum?

$$\sum_{i=1}^{n} a_i$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 204.

Question 5c of 14 (3 Arithmetic Series 303908)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 125

Question: Expand and evaluate the following series, where $n = 5$ and $a_i = 2 \cdot i^2 + 3$. What is the sum?

$$\sum_{i=1}^{n} a_i$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 125.

Question 6a of 14 (3 Arithmetic Series 163189)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 19

Question: The summation expression in the following series has an absolute value in it. Expand and evaluate the summation notation. What is the sum of the series?

$$\sum_{i=1}^{5} |3i - 10|$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 19.

Question 6b of 14 (3 Arithmetic Series 303909)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 27

Question: The summation expression in the following series has an absolute value in it. Expand and evaluate the summation notation. What is the sum of the series?

$$\sum_{i=1}^{6} |3i-1|$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 27.

Question 6c of 14 (3 Arithmetic Series 303910)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 38

Question: The summation expression in the following series has an absolute value in it. Expand and evaluate the summation notation. What is the sum of the series?

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 38.

Question 7a of 14 (3 Arithmetic Series 163196)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: What is the sum of the arithmetic series below?

-100 + -95 + -90 + -85 + ... + -5 + 0 + 5 + ... + 85 + 90 + 95 + 100

	Choice	Feedback
A.	1,050	
***B.**	0	
C.	-1,050	
D.	2,100	
E.	2,152.5	

Global Incorrect Feedback
The correct answer is: 0.

Question 7b of 14 (3 Arithmetic Series 303911)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: What is the sum of the arithmetic series below?

-105 + -100 + -95 + -90 + -85 + ... + -5 + 0 + 5 + ... + 85 + 90 +

95 + 100 + 105

	Choice	Feedback
A.	1,050	
***B.**	0	
C.	-1,050	
D.	2,100	
E.	2,152.5	

Global Incorrect Feedback
The correct answer is: 0.

Question 7c of 14 (3 Arithmetic Series 303912)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: What is the sum of the arithmetic series below?

-110 + -100 + -90 + -80 + ... + -10 + 0 + 10 + ... + 80 + 90 + 100 + 110

	Choice	Feedback
***A.**	0	
B.	1,050	
C.	-1,050	
D.	2,100	
E.	2,152.5	

Global Incorrect Feedback
The correct answer is: 0.

Question 8a of 14 (3 Arithmetic Series 163222)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 468

Question: What is the sum of the arithmetic series below? Use the formula for the sum of an arithmetic series.

$$\sum_{i=1}^{18} 2i + 7$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 468.

Question 8b of 14 (3 Arithmetic Series 303913)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 486

Question: What is the sum of the arithmetic series below? Use the formula for the sum of an arithmetic series.

$$\sum_{i=1}^{10} 2i+0$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 486.

Question 8c of 14 (3 Arithmetic Series 303914)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 504

Question: What is the sum of the arithmetic series below? Use the formula for the sum of an arithmetic series.

$$\sum_{i=1}^{10} 2i+0$$

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 504.

Question 9a of 14 (3 Arithmetic Series 163235)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: What is the sum of the arithmetic series below?

$$\sum_{i=1}^{1000} 2i$$

	Choice	Feedback
A.	2,000	
B.	5,050	
***C.**	1,001,000	
D.	500,500	
E.	1,000,000	

Global Incorrect Feedback
The correct answer is: 1,001,000.

Question 9b of 14 (3 Arithmetic Series 303915)

Maximum Attempts: 1
Question Type: Multiple Choice
Maximum Score: 2
Question: What is the sum of the arithmetic series below?

$$\sum_{i=1}^{500} 2i$$

	Choice	Feedback
A.	1,000	
B.	2,500	
C.	1,001,000	
***D.**	250,500	
E.	1,000,000	

Global Incorrect Feedback
The correct answer is: 250,500.

Question 9c of 14 (3 Arithmetic Series 303916)

Maximum Attempts: 1

Question Type: Multiple Choice

Maximum Score: 2

Question: What is the sum of the arithmetic series below?

$$\sum_{i=1}^{1000} 3i$$

	Choice	Feedback
A.	3,000	
B.	6,060	
C.	1,001,000	
D.	600,600	
***E.**	1,501,500	

Global Incorrect Feedback
The correct answer is: 1,501,500.

Question 10a of 14 (3 Arithmetic Series 163244)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: Jaime is 8 years old today. Assume that on every one of his birthdays since the first, Jaime has blown out a number of candles equal to his age. (O.K., so he had a little help on the first few birthdays. Still assume that he blew out the right number of candles every year.)

The total number of candles Jaime has blown out in his life equals the sum of the arithmetic series 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8.

	Choice	Feedback
*A.	True	
B.	False	

Global Incorrect Feedback
The correct answer is: True.

Question 10b of 14 (3 Arithmetic Series 303917)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: Jaime is 9 years old today. Assume that on every one of his birthdays since the first, Jaime has blown out a number of candles equal to his age. (O.K., so he had a little help on the first few birthdays. Still assume that he blew out the right number of candles every year.)

The total number of candles Jaime has blown out in his life equals the sum of the arithmetic series 0 + 2 + 3 + 4 + 5 + 6 + 7 + 9.

	Choice	Feedback
A.	True	
*B.	False	

Global Incorrect Feedback
The correct answer is: False.

Question 10c of 14 (3 Arithmetic Series 303918)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: Jaime is 10 years old today. Assume that on every one of his birthdays since the first, Jaime has blown out a number of candles equal to his age. (O.K., so he had a little help on the first few birthdays. Still assume that he blew out the right number of candles every year.)

The total number of candles Jaime has blown out in his life equals the sum of the arithmetic series 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10.

	Choice	Feedback
*A.	True	
B.	False	

Global Incorrect Feedback
The correct answer is: True.

Question 11a of 14 (3 Arithmetic Series 163246)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 165025

Question: The imaginary monster Dracula is 574 years old, according to legend. Since that very first birthday long ago, when he happily blew out one candle on a cake decorated with drippy red frosting, how many birthday candles has he blown out in his whole horrifying life? Assume that Drac has always blown out exactly *n* candles on his *n*th birthday.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 165,025.

Question 11b of 14 (3 Arithmetic Series 303919)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 165600

Question: The imaginary monster Dracula is 575 years old, according to legend. Since that very first birthday long ago, when he happily blew out one candle on a cake decorated with drippy red frosting, how many birthday candles has he blown out in his whole horrifying life? Assume that Drac has always blown out exactly *n* candles on his *n*th birthday.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 165,600.

Question 11c of 14 (3 Arithmetic Series 303920)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 166176

Question: The imaginary monster Dracula is 576 years old, according to legend. Since that very first birthday long ago, when he happily blew out one candle on a cake decorated with drippy red frosting, how many birthday candles has he blown out in his whole horrifying life? Assume that Drac has always blown out exactly *n* candles on his *n*th birthday.

Attempt	Incorrect Feedback
1st	

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 166,176.

Question 12a of 14 (3 Arithmetic Series 163248)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 144

Question: What is the sum of the arithmetic series of odd numbers below?

1 + 3 + 5 + ... + 23

Attempt	Incorrect Feedback
1st	Inocrrect. Use the fact that this series is given by $2n$ -1 for n = 1 to 12.

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 144.

Question 12b of 14 (3 Arithmetic Series 303921)

Maximum Attempts: 1
Question Type: Numeric Fill In Blank
Maximum Score: 2
Correct Answer: 169
Question: What is the sum of the arithmetic series of odd numbers below?

1 + 3 + 5 + ... + 25

Attempt	Incorrect Feedback
1st	Inocrrect. Use the fact that this series is given by $2n$ -1 for n = 1 to 13.

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 169.

Question 12c of 14 (3 Arithmetic Series 303922)

Maximum Attempts: 1
Question Type: Numeric Fill In Blank
Maximum Score: 2
Correct Answer: 196
Question: What is the sum of the arithmetic series of odd numbers below?

1 + 3 + 5 + ... + 27

Attempt	Incorrect Feedback
1st	Inocrrect. Use the fact that this series is given by $2n$ -1 for n = 1 to 14.

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 196.

Question 13a of 14 (3 Arithmetic Series 163249)

Maximum Attempts: 1
Question Type: Numeric Fill In Blank
Maximum Score: 2
Correct Answer: 610
Question: What is the sum of the arithmetic series below?

2 + 5 + 8 + ... + 59

Attempt	Incorrect Feedback
1st	Inocrrect. Use the fact that this series is given by 3*n* -1 for *n* = 1 to 20.

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 610.

Question 13b of 14 (3 Arithmetic Series 303923)

Maximum Attempts: 1
Question Type: Numeric Fill In Blank
Maximum Score: 2
Correct Answer: 551
Question: What is the sum of the arithmetic series below?

2 + 5 + 8 + ... + 56

Attempt	Incorrect Feedback
1st	Inocrrect. Use the fact that this series is given by 3*n* -1 for *n* = 1 to 19.

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 551.

Question 13c of 14 (3 Arithmetic Series 303924)

Maximum Attempts: 1

Question Type: Numeric Fill In Blank

Maximum Score: 2

Correct Answer: 495

Question: What is the sum of the arithmetic series below?

2 + 5 + 8 + ... + 53

Attempt	Incorrect Feedback
1st	Inocrrect. Use the fact that this series is given by $3n$ -1 for n = 1 to 18.

	Correct Feedback

	Global Incorrect Feedback
	The correct answer is: 495.

Question 14a of 14 (3 Arithmetic Series 163250)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: A certain politician has a brilliant idea. He will increase his popularity and assure reelection by giving away cash to everybody in the country. He will give $1 to a certain U.S. citizen, $2 to another, $3 to another, and so on until he has given away $297,624,985 to the 297,624,985th and last citizen of the United States.

The amount of money he gives away is greater than the U.S. national debt of $8,073,179,035,462.

	Choice	Feedback

*A.	True	
B.	False	

Global Incorrect Feedback
The correct answer is: True.

Question 14b of 14 (3 Arithmetic Series 303925)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: A certain politician has a brilliant idea. He will increase his popularity and assure reelection by giving away cash to everybody in the country. He will give $1 to a certain U.S. citizen, $2 to another, $3 to another, and so on until he has given away $297,624,985 to the 297,624,985th and last citizen of the United States.

The amount of money he gives away is greater than the U.S. national debt of $8,073,179,035,462.

	Choice	Feedback
*A.	True	
B.	False	

Global Incorrect Feedback
The correct answer is: True.

Question 14c of 14 (3 Arithmetic Series 303926)

Maximum Attempts: 1

Question Type: True-False

Maximum Score: 2

Question: A certain politician has a brilliant idea. He will increase his popularity and assure reelection by giving away cash to everybody in the country.

He will give $1 to a certain U.S. citizen, $2 to another, $3 to another, and so on until he has given away $297,624,985 to the 297,624,985th and last citizen of the United States.

The amount of money he gives away is greater than the U.S. national debt of $8,073,179,035,462.

	Choice	Feedback
*A.	True	
B.	False	

Global Incorrect Feedback
The correct answer is: True.