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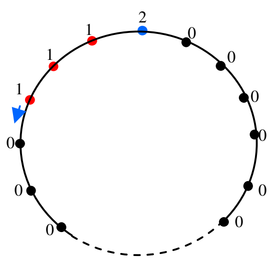
Number of bracelets made with 1 blue, 3 identical red and n identical black beads.

Tam değer fonksiyonu:

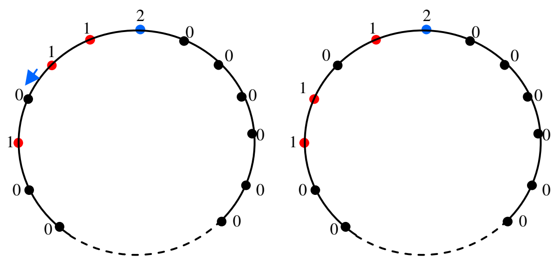
$x \in R$ olmak üzere, x'ten büyük olmayan en büyük tamsayıya, **x'in tam değeri** denir ve $\lfloor x \rfloor$ sembolü ile gösterilir. Yani,

$a \in Z$ olmak üzere, $a \leq x < a+1 \quad \Leftrightarrow \quad \lfloor x \rfloor = a$ dır.

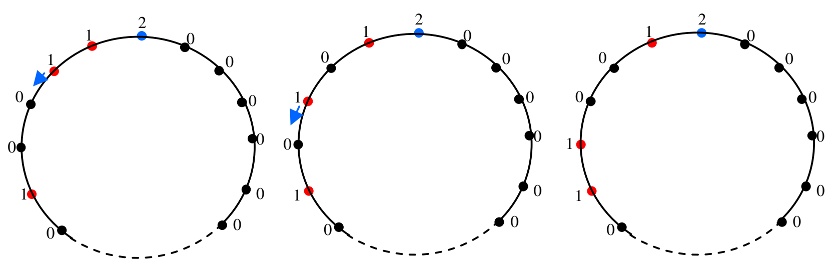
Teorem: 1 tane mavi, 3 tane özdeş kırmızı ve n tane özdeş siyah boncuklar ile yapılacak bilekliklerin sayısı $F(1,3,n)$ ise $F(1,3,n) = \dfrac{n.(n+1)}{2} + \left\lfloor \dfrac{n}{2} \right\rfloor + 1 + F(1,3,n-2)$ dir. (Burada $F(1,3,1) = 2$ ve $F(1,3,2) = 6$ dir.)



1 durum

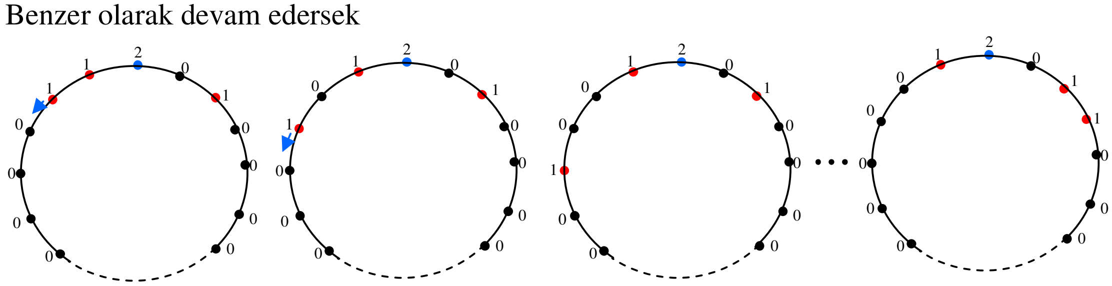


2 durum

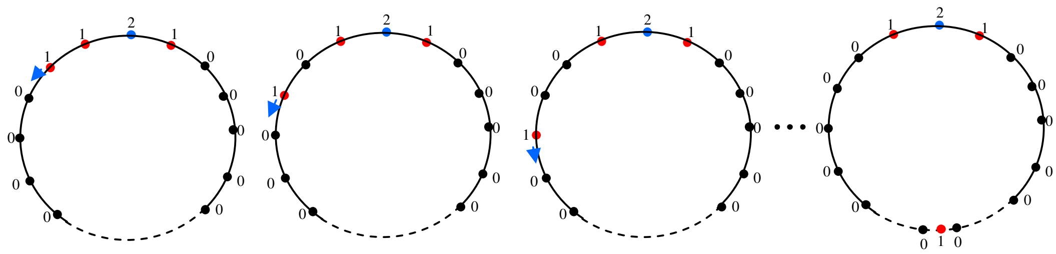


3 durum

Benzer olarak devam edersek



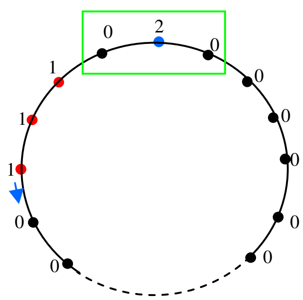
n **tane durum vardır.**

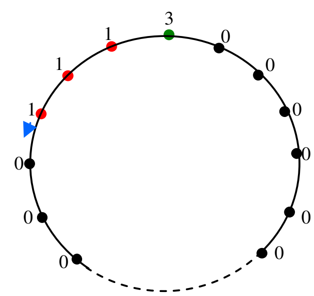


$\left\lfloor \frac{n}{2} \right\rfloor + 1$ **durum vardır.**

$1+2+3+...+n+\left\lfloor \frac{n}{2} \right\rfloor + 1$ oluşan toplam durum sayısı

$(020) \rightarrow 3$ ile gösterirsek





$F(1,3,n-2)$ **durum vardır.**

$F(1,3,1)=2$ ve $F(1,3,2)=6$ olmak üzere

$$F(1,3,n)=\frac{n.(n+1)}{2}+\left\lfloor \frac{n}{2} \right\rfloor+1+F(1,3,n-2)$$ fonksiyonel denklemi ile ifade edebiliriz.

$$F(1,3,3)=\frac{3.4}{2}+\left\lfloor \frac{3}{2} \right\rfloor+1+F(1,3,1)=6+1+1+2=10$$

$$F(1,3,4)=\frac{4.5}{2}+\left\lfloor \frac{4}{2} \right\rfloor+1+F(1,3,2)=10+2+1+6=19$$

$$F(1,3,5)=\frac{5.6}{2}+\left\lfloor \frac{5}{2} \right\rfloor+1+F(1,3,3)=15+2+1+10=28$$

$$F(1,3,6)=\frac{6.7}{2}+\left\lfloor \frac{6}{2} \right\rfloor+1+F(1,3,4)=21+3+1+19=44$$

$$F(1,3,7)=\frac{7.8}{2}+\left\lfloor \frac{7}{2} \right\rfloor+1+F(1,3,5)=28+3+1+28=60$$