DFT Analysis (5B)

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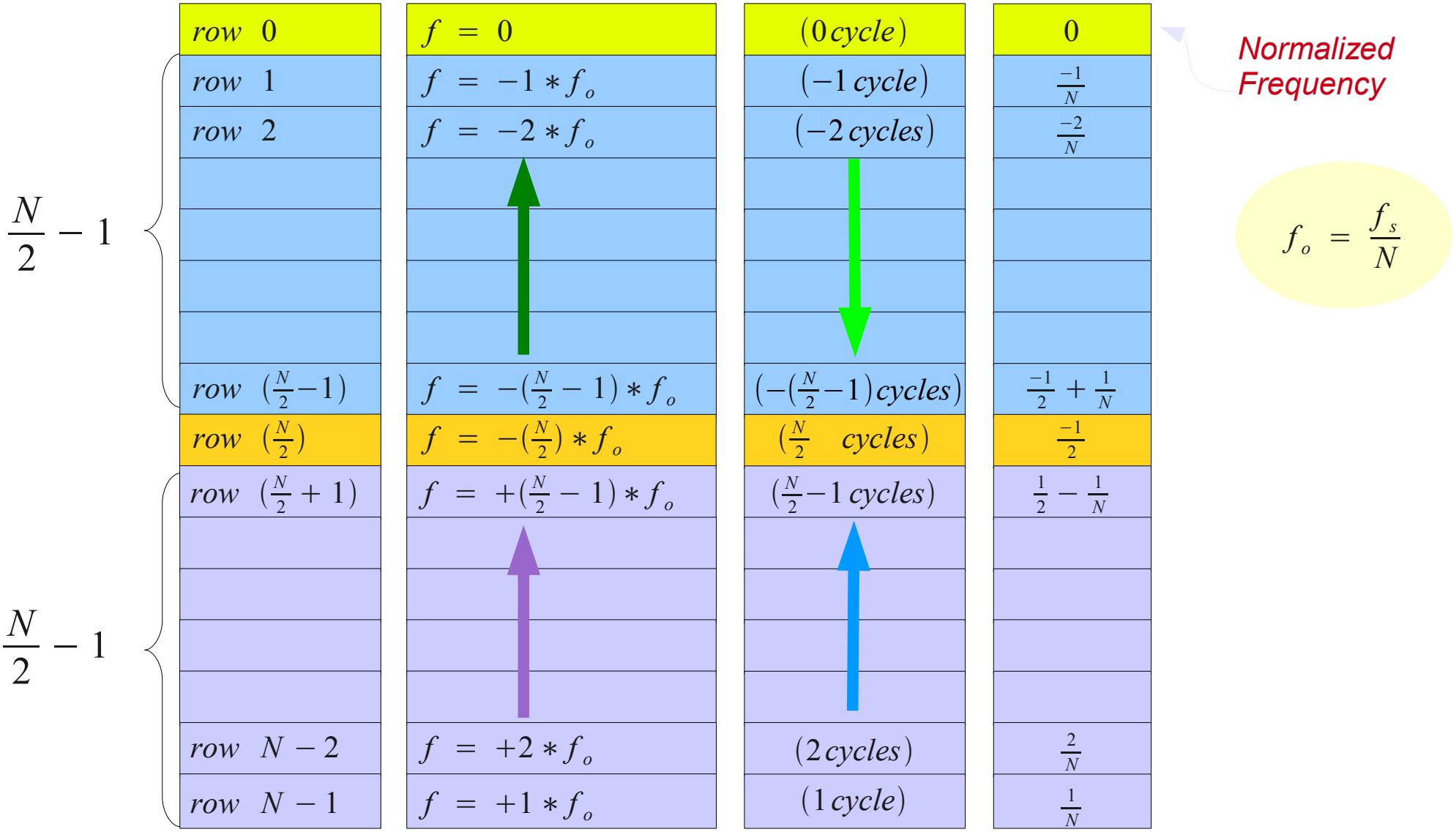
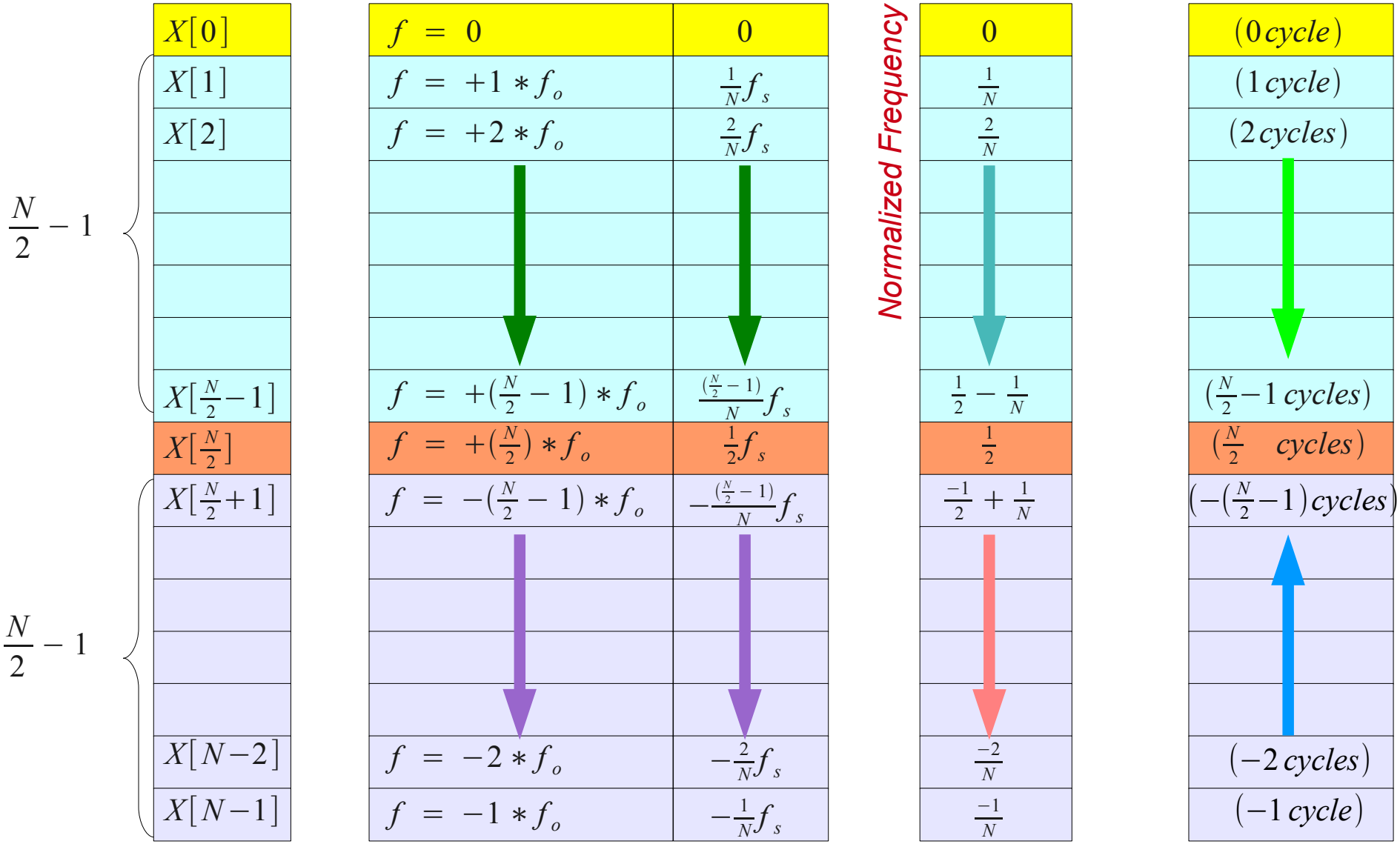
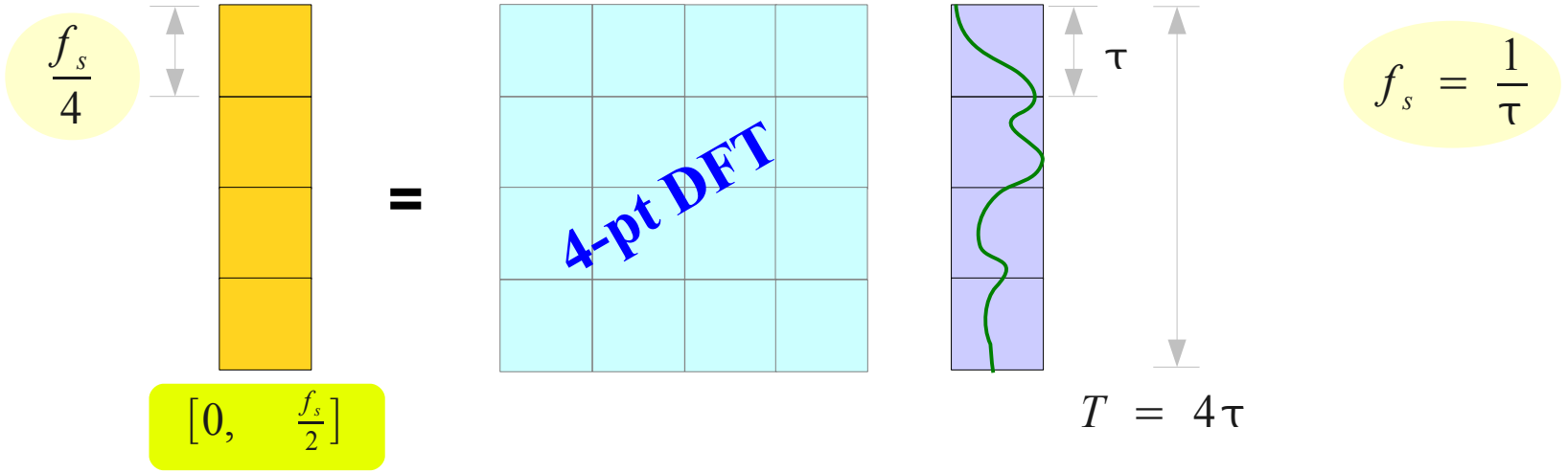
This document was produced by using OpenOffice and Octave.

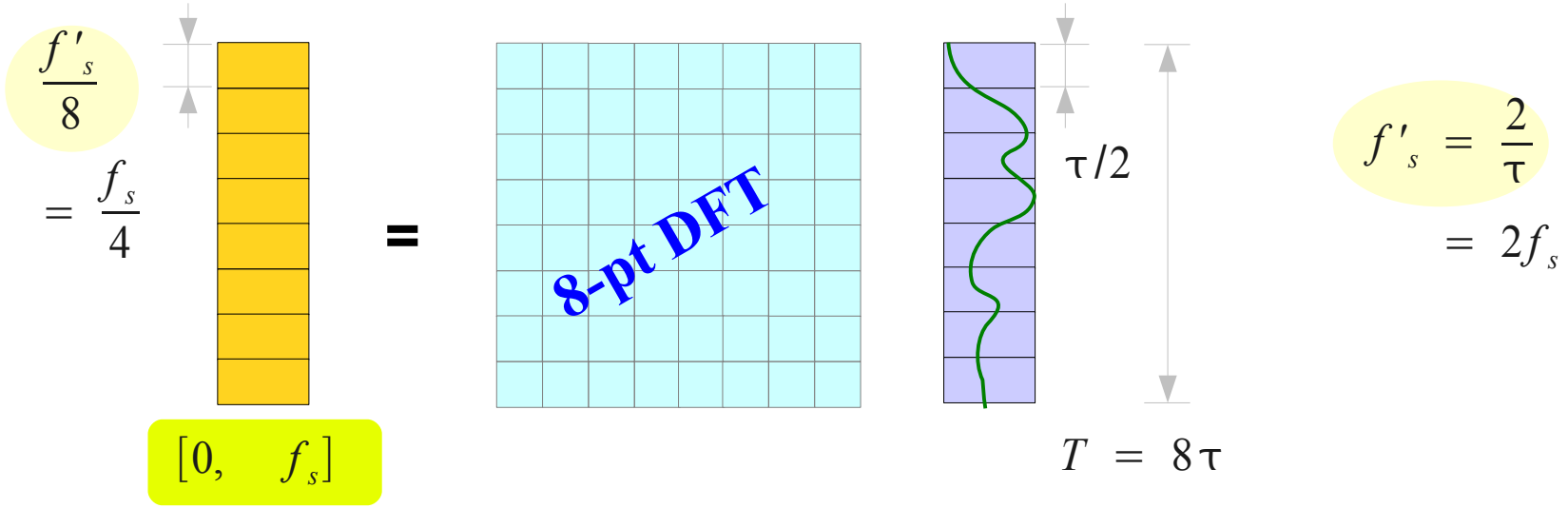
Frequency View of a DFT Matrix

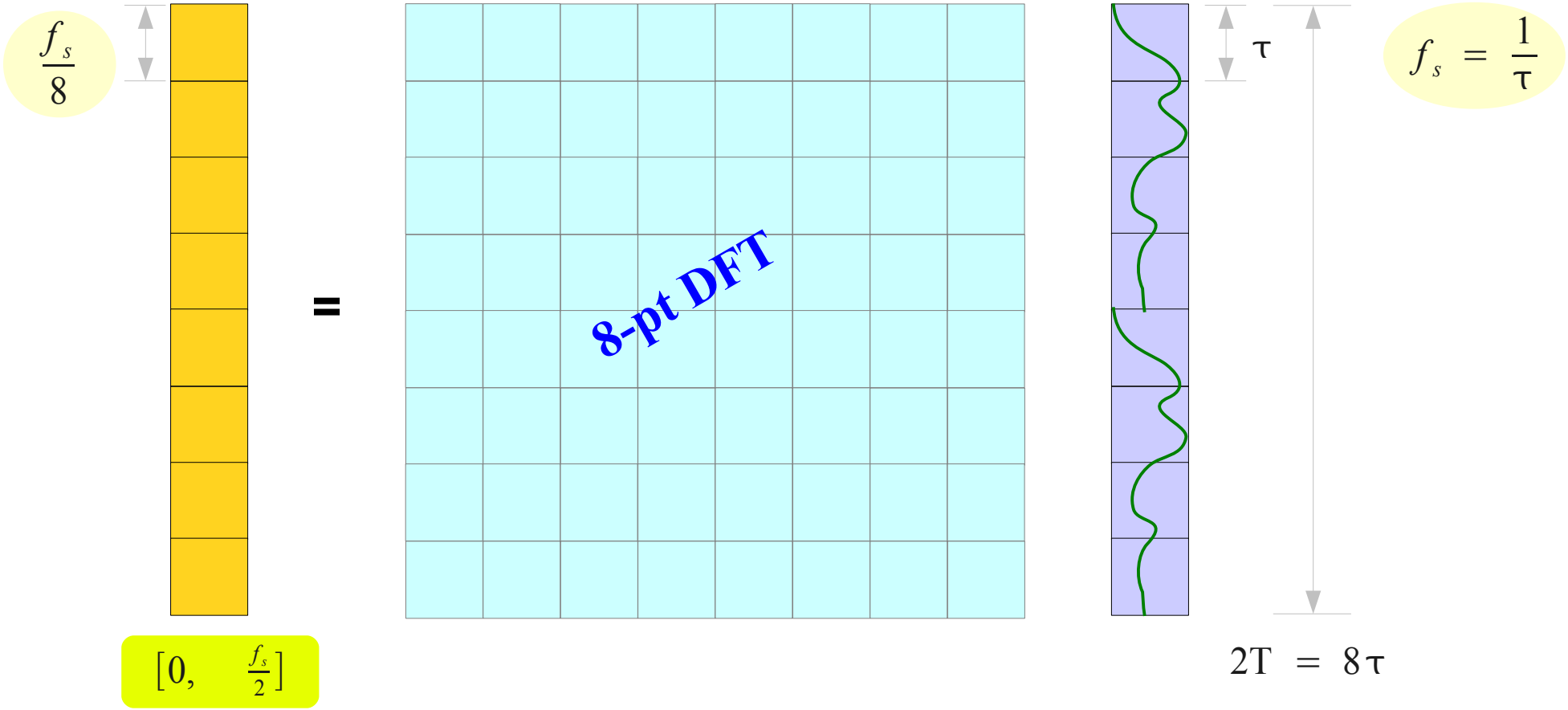


Frequency View of a X[i] Vector




$\frac{f_s}{4}$
=
4-pt DFT
τ
$f_s = \frac{1}{\tau}$
$[0, \quad \frac{f_s}{2}]$
$T = 4\tau$


$\frac{f'_s}{8}$
$= \frac{f_s}{4}$
=
8-pt DFT
τ/2
$f'_s = \frac{2}{\tau}$
$= 2f_s$
$[0, \quad f_s]$
$T = 8\tau$


$\frac{f_s}{8}$
=
8-pt DFT
τ
$f_s = \frac{1}{\tau}$
$[0, \quad \frac{f_s}{2}]$
$2T = 8\tau$

References

[1] http://en.wikipedia.org/
[2] J.H. McClellan, et al., Signal Processing First, Pearson Prentice Hall, 2003
[3] A "graphical interpretation" of the DFT and FFT, by Steve Mann