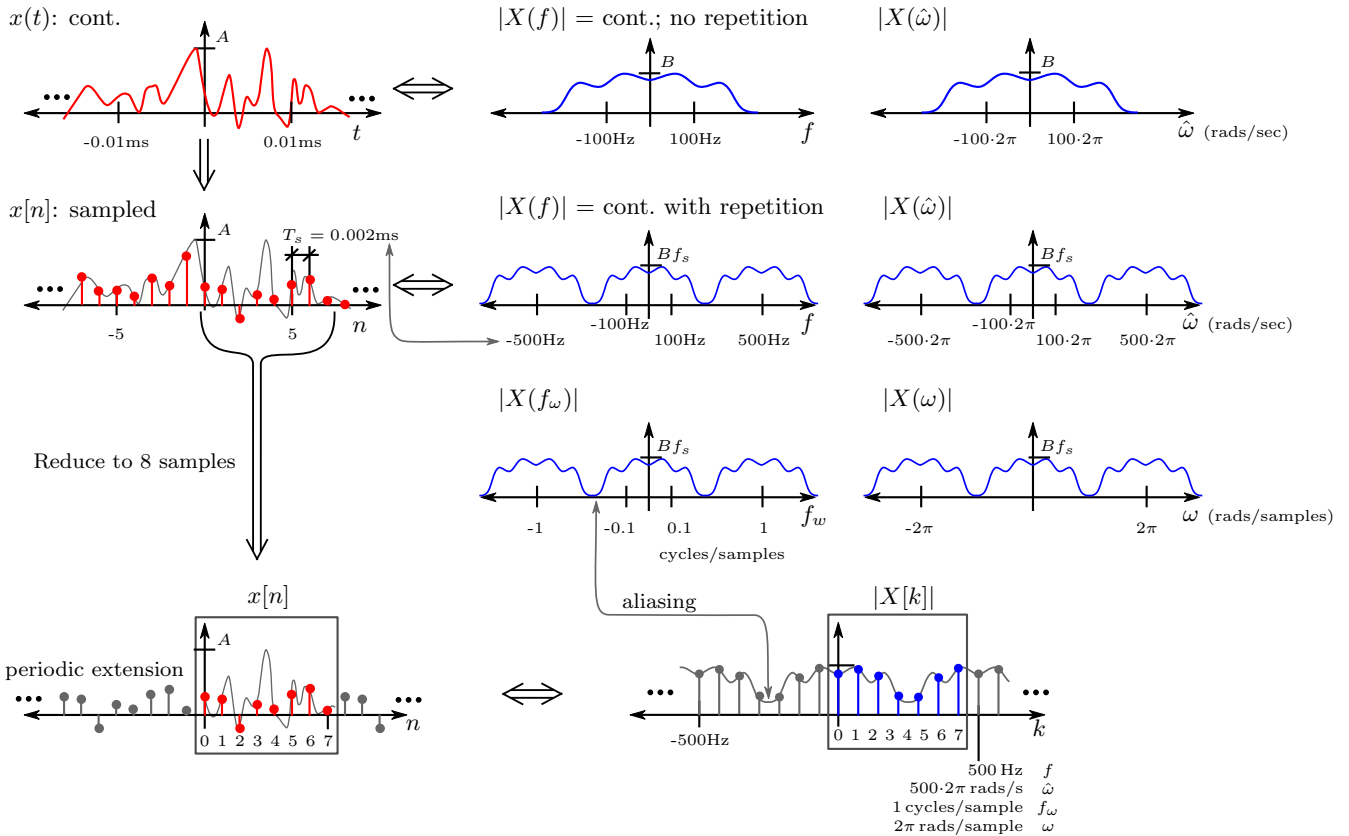


Systems and Signals cheat sheet

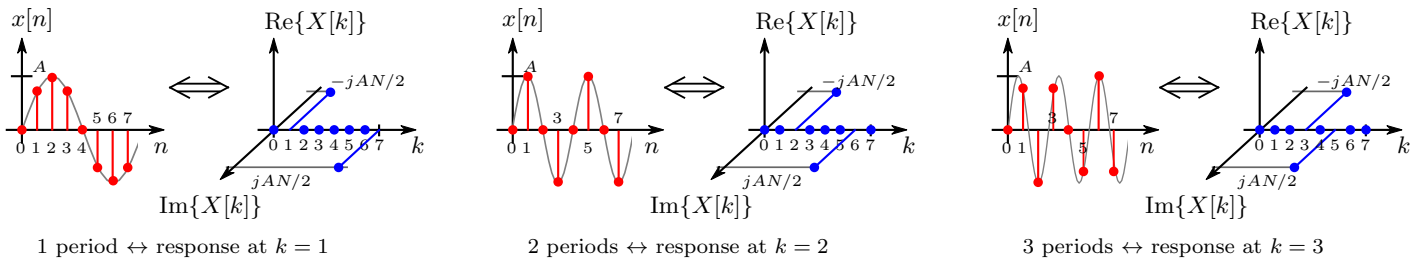
Scale $\hat{\omega} = 2\pi f$ not in the notes but was given in previous subjects.

• Fourier transformations: continuous and discrete:

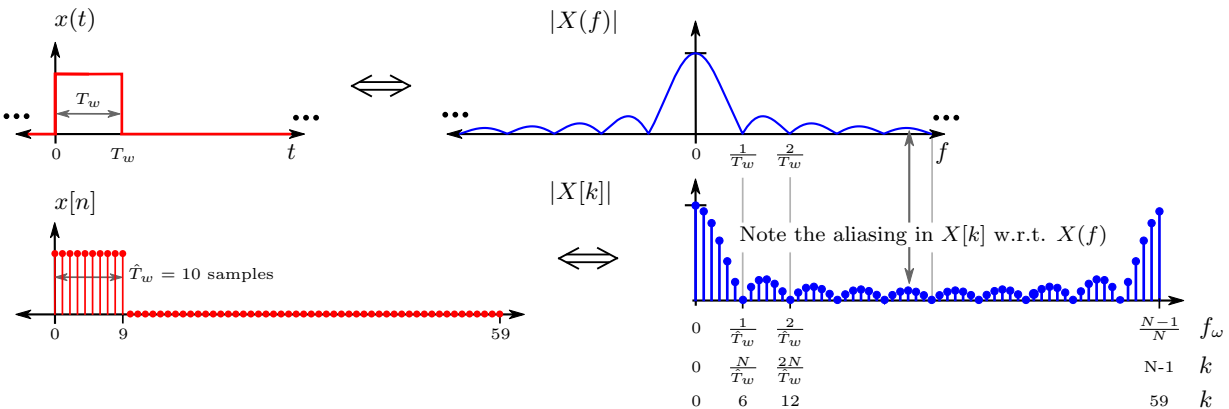


The radians derived units (such as $\hat{\omega}$ and ω) are just an x -axis scaled version of their frequency counterparts. I would suggest avoiding them whenever possible, since the 2π factor often leads hasty students to scale-2 errors, and equations which relies on integrals in the frequency domain are hassled with a factor of 2π to compensate for scaling differences.

• Relation between number of periods and k (see s1.46):



• Convert a continuous transformation pair to a discrete transformation pair (see s1.10):



By taking the sample indices of the discrete-time signal as equivalent to "time", we can easily obtain the frequency response with scale f_w .