Sinc Interpolation

Let's assume X_c is our continous signal. and X_d is sampled signal.

$$X_R(t) = \sum_{n=0}^{N-1} X_d[n] \cdot \frac{\sin\left(\frac{\pi(t-nT_s)}{T_s}\right)}{\frac{\pi(t-nT_s)}{T_s}} \quad (1)$$

$T_s \rightarrow$ sampling period

$n \rightarrow n_{th}$ sample

$N \rightarrow$ number of samples

$X_R(t)$ is the reconstructed signal from samples. This equation is obtained by inserting equation 4.22 in equation 4.26 on textbook. (Pages 92 and 94)

→ Reconstructed signal should have same length with continous one.

→ You can use a shorter time period then 1 for better visualization in parts 4-5

→ (1) gives the value of X_t at time=t. Applying this formula for all period will give the reconstructed signal.