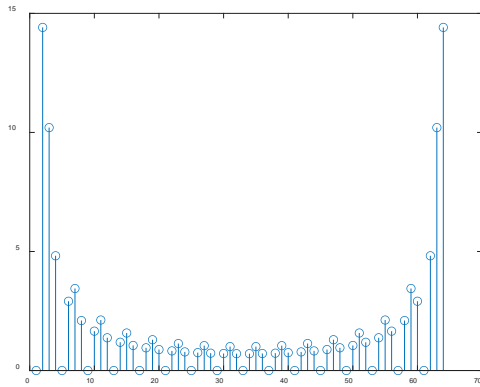


N = 64, Length = 16



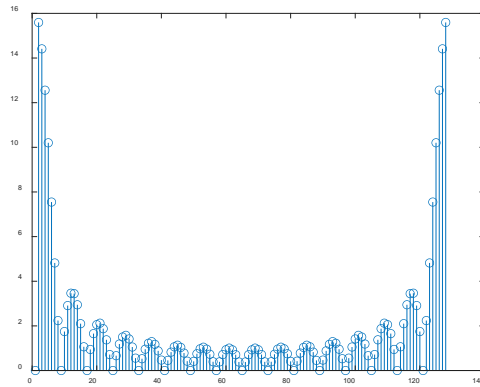
Frequency interval between successive samples for the plot in part a is $\frac{2\pi}{64}$.

At $w = 0$, the value is 16

Interval between null samples is $\frac{64}{16}$

The null sample interval is always $\frac{N}{L}$

N=128, Length = 16



Frequency interval between successive samples for the plot in part a is $\frac{2\pi}{128}$.

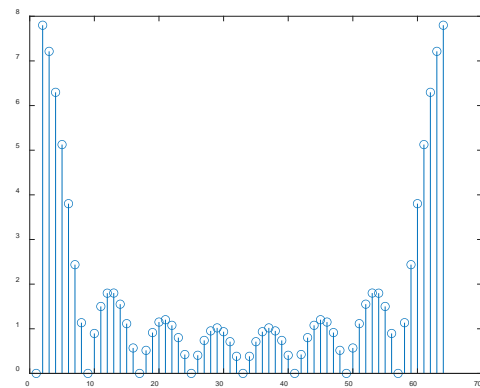
At $w = 0$, the value is 16

Interval between null samples is $\frac{128}{16}$

The null sample interval is always $\frac{N}{L}$

The one with greater N has a faster sampling rate than the smaller N, the one with higher N look closer to the continuous time signal.

N = 64, Length = 8



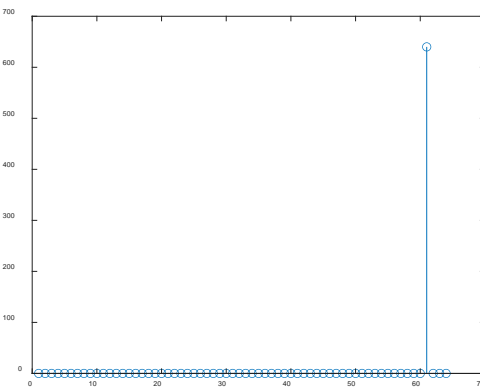
Frequency interval between successive samples for the plot in part a is $\frac{2\pi}{64}$

At $w = 0$, the value is 8

Interval between null samples is $\frac{64}{8}$

The null sample interval is always $\frac{N}{L}$

N = 64, Length = 64



Frequency interval between successive samples for the plot in part a is $\frac{2\pi}{64}$

At $w = 0$, the value is $\sum_{n=0}^{N-1} x(n) = -8.3489e^{-14} - 4.085e^{-14}$

Interval between null samples is $\frac{64}{64}$

The null sample interval is always $\frac{N}{L}$