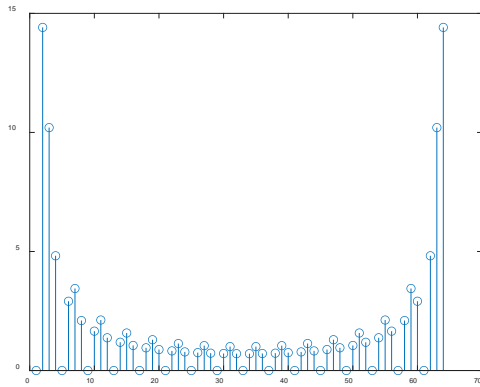


N = 64, Length = 16



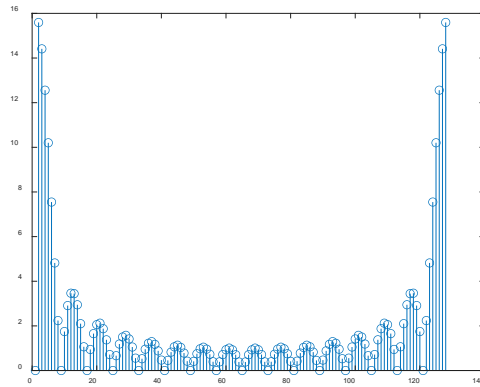
Frequency interval between successive samples for the plot in part a is $\frac{2\pi}{64}$

At $w = 0$, the value is 16

Interval between null samples is $\frac{2\pi}{64} * 4 = \frac{2\pi}{16}$

The null sample interval is always $\frac{2\pi}{\text{Length } h}$

N=128, Length = 16



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

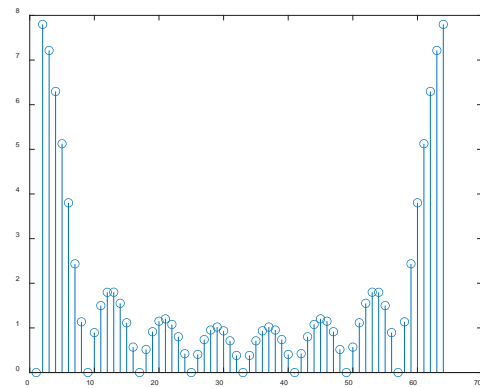
At $w = 0$, the value is 16

Interval between null samples is $\frac{2\pi}{128} * 8 = \frac{2\pi}{16}$

The null sample interval is always $\frac{2\pi}{\text{Length } h}$

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



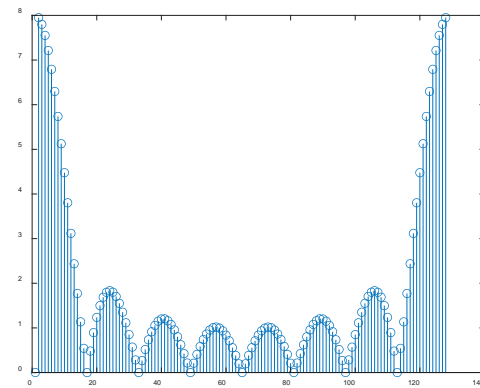
Frequency interval between successive samples for the plot in part a is $\frac{2\pi}{64}$

At $w = 0$, the value is 8

Interval between null samples is $\frac{2\pi}{64} * 8 = \frac{2\pi}{8}$

The null sample interval is always $\frac{2\pi}{\text{Length } h}$

N = 128, Length = 8



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

At $w = 0$, the value is 8

Interval between null samples is $\frac{2\pi}{128} * 16 = \frac{2\pi}{8}$

The null sample interval is always $\frac{2\pi}{\text{Length } h}$

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.