Monday, 9 Jan 2023

10 points total.

Name: _____

UID: _____

1. (10 points) Consider the following sequences:

$$x[n] = \{2, \quad 0, \quad 2, \quad 3, \quad 1, \quad 0, \quad 9\}, -3 \leq n \leq 3,$$

The sample values of each of the above sequences outside the ranges specified are all zeros. Write out and plot $y[n] = x[\frac{1}{2}(n+3)]$.

Solutions:

Hint: Do left shifting first and then upsampling.

$$y[n] = \{2, \quad 0, \quad 0, \quad 0, \quad 2, \quad 0, \quad 3, \quad 0, \quad 1, \quad 0, \quad 0, \quad 0, \quad 9\}, -9 \leq n \leq 3,$$