

PROBLEM:

Suppose that a discrete-time signal $x[n]$ is given by the formula

$$x[n] = 333 \cos(0.35\pi n - \pi/3)$$

and that it was obtained by sampling a continuous-time signal at a sampling rate of $f_s = 2500$ samples/second.

- Determine two *different* continuous-time signals $x_1(t)$ and $x_2(t)$ whose samples are equal to $x[n]$; i.e., find $x_1(t)$ and $x_2(t)$ such that $x[n] = x_1(nT) = x_2(nT)$ if $T = .0004$ sec. Both of these signals should have a frequency less than 2500 Hz. Give a formula for each signal.
- Determine the amplitude and phase for both of the signals found in part (a).