ECE310: Quiz#6 (3pm Section E) Fall 2018

1. (5 pts) The frequency response of an LTI system is

$$H_d(\omega) = (\omega^3 + \omega + 2)e^{j\omega \sin(3\omega)}, \quad \frac{\pi}{7} \leq \omega \leq \frac{4\pi}{5}$$

   (a) Is the system real?

   (b) Determine the output $y[n]$ for the input $x[n] = 2 + j^n + \cos(\frac{\pi}{9})\sin(\frac{7\pi n}{8})$.

2. (5 pts) Consider the discrete-time signal $x[n] = \cos(\frac{\pi}{4})\cos(\frac{7\pi n}{11})$. Find two continuous-time signals $x_c(t)$ that will produce $x[n]$ when sampled at a rate of 440 samples per second.