# ECE310: Quiz#6 (10am Section G) Fall 2018

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

$$H_d(\omega) = (\omega^4 + 2\omega^2)e^{j\omega\cos(2\omega)}, \quad \frac{\pi}{6} \leq |\omega| \leq \frac{3\pi}{4}$$

   (a) Is the system real?

   (b) Determine the output $y[n]$ for the input $x[n] = 1 + \cos(\frac{\pi}{2}n) + \cos(\frac{\pi}{3})\sin(\frac{6\pi}{7}n)$.

2. (5 pts) Consider the discrete-time signal $x[n] = \cos(\frac{5\pi}{9}n)$. Find two continuous-time signals $x_c(t)$ that will produce $x[n]$ when sampled at a rate of 180 samples per second.