ECE351: Signals and Systems I - Fall 2018 - Dr. Thinh Nguyen
Homework 7
Due Wed. 11/14/18.

1. Evaluate the frequency-domain representations of the following signals:
   (a) \( x(t) = e^{-2t}u(t - 3) \)
   (b) \( x(t) = e^{-4|t|} \)
   (c) \( x(t) = te^{-t}u(t) \)

2. Determine the time-domain signals corresponding to the following FTs:
   (a) \( X(j\omega) = \begin{cases} 
   \cos(2\omega), & |\omega| \leq \frac{\pi}{4} \\
   0, & \text{otherwise}
   \end{cases} \)
   (b) \( X(j\omega) = e^{-2\omega}u(\omega) \)
   (c) \( X(j\omega) = e^{-2|\omega|} \)

3. Determine the appropriate Fourier representations of the following time-domain signals.
   (a) \( x(t) = e^{-t}\cos(2\pi t)u(t) \)
   (b) \( X[n] = \begin{cases} 
   \cos\left(\frac{\pi}{10}n\right) + j\sin\left(\frac{\pi}{10}n\right), & |n| < 10 \\
   0, & \text{otherwise}
   \end{cases} \)
   (c) \( x(t) = e^{1+t}u(-t + 2) \)