

**ECE 310: Quiz #5 (3pm Section E) Fall 2018**

**UIN:** \_\_\_\_\_

**Name:** \_\_\_\_\_

1. (5 pts) Compute the DTFT of  $x[n] = (\frac{j}{4})^n e^{-j\frac{\pi}{4}n} u[n]$ .

2. (5 pts) Let  $x[n]$  be a signal with DTFT  $X_d(\omega)$ .

(a) Find an expression for the DTFT of  $y[n] = x[n] \cos(\frac{\pi}{2}n)$  in terms of  $X_d(\omega)$ .

(b) Suppose  $X_d(\omega)$  is as shown below. Sketch the DTFT of  $y[n]$ . Label the axes and “important points” on your sketch.

