

## EE 2000 Assignment # 8

(taken from Dr. Jingxian Wu, University of Arkansas, 2020.)

1. Find the Fourier transform of the following signals

(a)  $s(t) = \text{rect}\left(\frac{t-1}{2}\right)$ .

(b)  $s(t) = e^{-2t}u(t)$

(c)  $s(t) = e^{2t}u(-t)$

(d)  $s(t) = 2e^{-3|t|} + 2\delta(t-3)$

2. Let  $X(\omega) = \text{rect}\left(\frac{\omega-1}{2}\right)$ . Find the Fourier transform of the following functions by using the properties of the Fourier transform

(a)  $x(-t)$

(b)  $x(-3t+6)$

(c)  $\frac{dx(t)}{dt}$