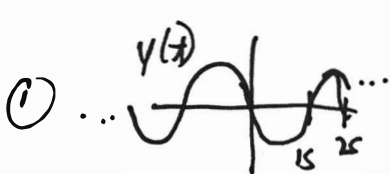
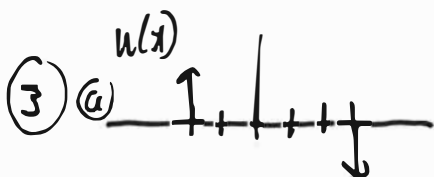


EE3032 - Dr. Durant - Quiz 2  
Fall 2019, Week 2

1.  $x(t) = \sin(4\pi t)$ .  $y(t) = x(-t)$ .
  - a. Sketch  $y(t)$ .
  - b. Which of the following symmetries does  $y(t)$  have? Even, odd. Justify your answer.
2. Sketch  $z(t) = u(t-2) - r(t-3)$
3.  $w(t) = \delta(t+2) - \delta(t-3)$ 
  - a. Sketch  $w(t)$
  - b. What is the area under  $w(t)$  from  $-\infty$  to  $0$ ? Explain your response.
4.  $q(t) = 3u(t+4) - 3u(t-4)$ 
  - a. Sketch  $q(t)$
  - b. Which of the following symmetries does  $q(t)$  have? Even, odd. Justify your answer.



ODD:  $y(-t) \stackrel{?}{=} -y(t)$   
 $x(t) = -x(-t)$   
 $\sin(4\pi t) = -\sin(-4\pi t)$   
 cancel since  $\sin$  is odd



OPTIONAL: total areas = 1

b  $\int_{-\infty}^0 \delta(t+2) - \delta(t-3) dt$   
 1 impulse, not soaked,  $\square = \int_{-\infty}^0 \delta(t+2) - \delta(t-3) dt$

ALWAYS  $\emptyset$  IN DOMAIN



b even only  
 $q(t) = q(-t) \quad \forall t \in \mathbb{R}$   
 For all real  $t$

eg.  $q(2) = q(-2) = +3$   
 $q(7) = q(-7) = 0$