solution (corrected)

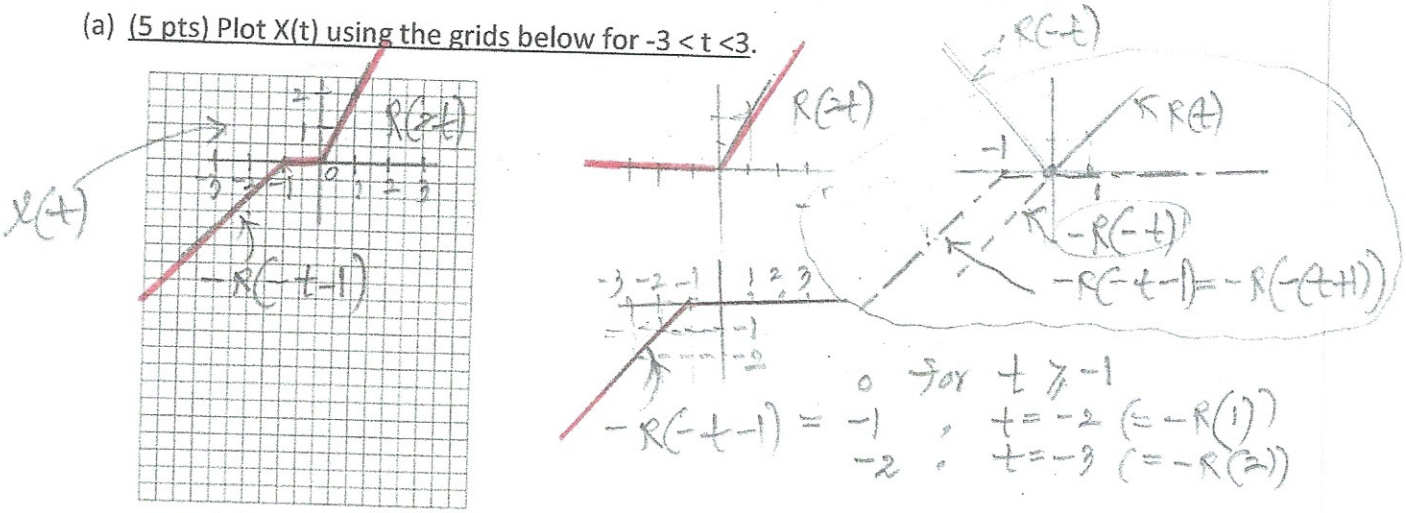
ECE103 Quiz #1 (15minutes) Oct. 8, 2018

NAME_____ ID_____

We have learned that any time-continuous signal X(t) can be decomposed into its even part Xe(t) and odd part Xo(t) which have the following properties: Xe(t)=Xe(-t), and Xo(t) = -Xo(-t)

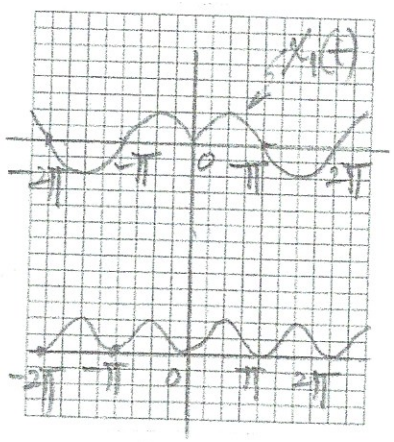
For **X(t)= R(2t) - R(-t-1)**, where R(t) is a ramp function with 0 for t<0 and t for t>0.

(a) (5 pts) Plot X(t) using the grids below for -3 < t <3.



(b) Let **X1(t) =sin t. sgn (t)**, where X(t) is as specified in part (a) and
sgn (t)= -1 for t < 0 and +1 for t > 0,

(i). (3pts) plot X1(t) using the grids below for -3 < t < 3,



(ii). (2 pts) What is the period of X1(t) squared, i.e., X1(t). X1(t)

T = π