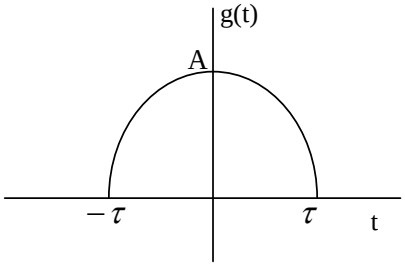
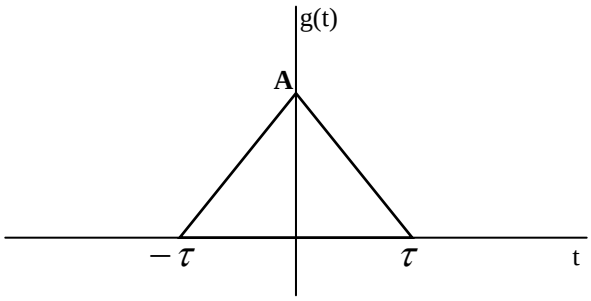
Arab Academy for Science and Technology & Maritime Transport
College of Engineering & Technology
Department : Electronics & Communication Engineering
Course Title : Signals&Systems Course No: EC 321
Lecturer : Communication Staff
TA : Communication TA's

Problem Set 3

Classwork :-

1. Find and plot the fourier transform for the following functions (From basic definition)





2. Sketch the following signals and then prove that $G_3(f) = G_1(f) + G_2(f)$

a) $g_1(t) = 4.rect\left(\frac{t-2}{4}\right)$

b) $g_2(t) = 4.rect\left(\frac{t+2}{4}\right)$

c) $g_3(t) = 4.rect\left(\frac{t}{8}\right)$

3. Find and plot FT the for the following functions (using FT properties)

a) $g(t) = rect\left(\frac{t-1}{2}\right) + tri\left(\frac{t-3}{3}\right)$

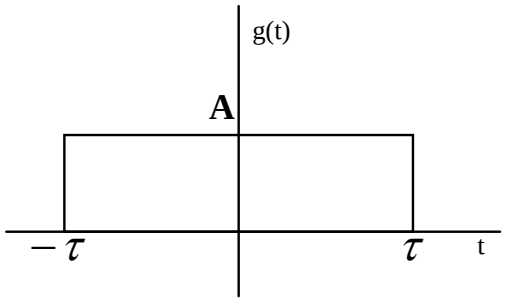
b) $g(t) = 4.rect(0.5t-1) + 4.rect(0.5t+1)$

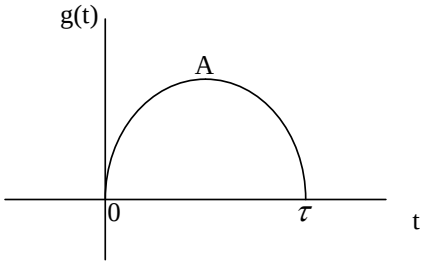
c) $g(t) = 3.rect\left(\frac{t}{30}\right).u(t)$

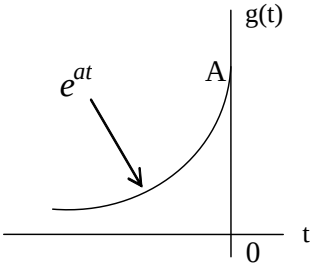
d) $g(t) = e^{-(2t+4)}u(t)$

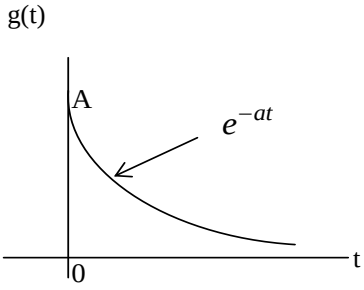
Homework Assignment:-

1. **Find and plot the fourier transform for the following functions (From basic definition):**









2. **Find and plot FT the for the following functions (using FT properties)**

a) $g(t) = 3.tri\left(\frac{t+2}{2}\right)$

b) $g(t) = rect\left(\frac{t}{10}\right).u(2-t)$

c) $g(t) = 3.rect\left(\frac{t}{4}\right) + 2.tri\left(\frac{t}{2}\right)$

d) $g(t) = \mathbf{2}.e^{-\mathbf{2}t}.u(t-\mathbf{2})$

e) $g(t) = e^{-\mathbf{3}|t-\mathbf{2}|}$

f) $g(t) = e^{-\mathbf{2}t}u(t) + e^{\mathbf{2}t}u(-t)$