

Assignment #4 CE242 : Signals & Systems
Dept. of Computer Engineering
Sharif University of Technology
Fall 2006

Distributed : 8/23

Due: 8/30

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1) Compute the Fourier transform of the following signals:

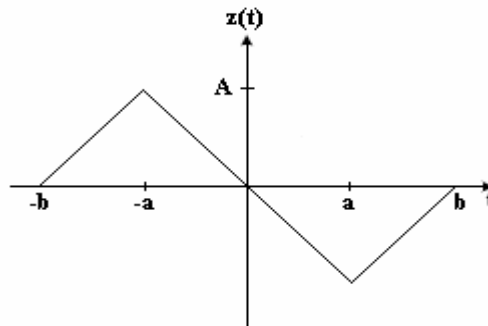
(a) $u(t+1) - 2u(t) + u(t-1)$

(b) $2 + te^{-0.1t}u(t-2)$

(c) $\sin(2\pi t)e^{-t}u(t)$

(d) $te^{-3|t-1|}$

(e) $z(t)$:



2) Find the continuous time signals corresponding to each of the following transforms:

(a) $X(j\omega) = \frac{\omega \cos \omega - \sin \omega}{\omega^2}$

(b) $X(j\omega) = \frac{j\omega}{(1 + j\omega)^2}$

(c) $X(j\omega) = \frac{4 \sin(2\omega - 4)}{2\omega - 4} - \frac{4 \sin(2\omega + 4)}{2\omega + 4}$

(d) $X(j\omega) = \frac{1}{j\omega(j\omega + 2)} - \pi\delta(\omega)$

(e) $X(j\omega) = \frac{j\omega + 3}{(j\omega + 1)^2}$

(f) $X(j\omega) = \frac{2 \sin(\omega)}{\omega(j\omega + 2)}$

3) Problem 4.16 of the textbook.

4) Problem 4.25 of the textbook.

5) Problem 4.32 of the textbook.