

EE351 Homework 7

1) Find the Laplace transform (unilateral) of the following functions:

(a) $u(t - 2)$

(b) $u(t) - u(t - 3)$

(c) $e^{-t}u(t - 1)$

(d) $e^{-2t} \sin(5t)u(t)$

2) Find the inverse Laplace transform (unilateral) of the following functions:

(a) $X(s) = \frac{2s + 5}{s^2 + 5s + 6}$

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

(c) $X(s) = \frac{3s + 5}{s^2 + 4s + 13}$

(d) $X(s) = \frac{(2s + 5)e^{-2s}}{s^2 + 5s + 6}$

(e) $X(s) = \frac{(s + 1)^2}{s^2 - s - 6}$