

ECE 500 HW 10/04/99

1. Solve for $x(t)$:

$$\frac{d^2 x}{dt^2} + 10 \frac{dx}{dt} + 21 x = 8u(t)$$

2. Find the inverse Laplace transform of

a) $\frac{2s}{(s+3)(s+7)}$

b) $\frac{2s}{(s+3)(s+7)(s+10)}$

c) $\frac{2s}{s^2 + 10s + 50}$

d) $\frac{s+7}{s^2 + s + 1}$

3. A system with Transfer Function

$$H(s) = \frac{1}{s^2 + 3s + 7}$$

is excited by a step input.

What is the output?