ECE311

Homework 4

Problem 1: Find the total response of following systems given the transfer functions, inputs and initial conditions:

    a. $T(s) = \frac{10}{s+4}$, $r(t) = \delta(t)$, $y(0^-) = 0$

    b. $T(s) = \frac{s-5}{s^2+3s+2}$, $r(t) = u(t)$, $y(0^-) = -3$, $y'(0^-) = 4$

Problem 2: Consider the second order system $T(s) = \frac{100}{s^2+3s+13}$, find the a) undamped natural frequency, b) the damping ratio, and c) the true (damped) oscillation frequency.