ECE 311 - Homework #12

Natural Response with LaPlace Transforms

Find the solution to the following differential equations with initial conditions

1) $\dfrac{dy}{dt} + 7y = 0$ $y(0) = 10$

2) $\dfrac{d^2y}{dt^2} + 6\dfrac{dy}{dt} + 5y = 0$ $y(0) = 10$ $\dfrac{dy(0)}{dt} = 3$

3) $\dfrac{d^2y}{dt^2} + 2\dfrac{dy}{dt} + 10y = 0$ $y(0) = 10$ $\dfrac{dy}{dt}(0) = 3$

4) $\dfrac{d^3y}{dt^3} + 6\dfrac{d^2y}{dt^2} + 11\dfrac{dy}{dt} + 6y = 0$ $y(0) = 10$ $\dfrac{dy}{dt}(0) = \dfrac{d^2y}{dt^2}(0) = 0$