

316-QUIZ 9-10

Name: _____

May 6, 2003

(1) Solve the initial value problem using Laplace transforms and sketch the solution:

$$y'' + y = \delta(t - 2\pi) , y(0) = 0 , y'(0) = -2 .$$

(2) Find the transfer function $H(s)$ for the system and the impulse response function $h(t)$ and give a formula for the solution to the IVP using convolutions:

$$y'' - 2y' + 5y = g(t) , y(0) = 0 , y'(0) = 2 .$$

(3) Solve the given IVP using Laplace transforms:

$$y'' + y = u(t - 3) , y(0) = 0 , y'(0) = 1 .$$

(4) Solve the given IVP using Laplace transforms:

$$y'' + 5y' + 6y = -tu(t - 2) , y(0) = 0 , y'(0) = -1 .$$