

MATH 2850: TEST 14 (25 points.)

NAME: _____

DUE: Wednesday, May 1st, at the beginning of class.

DIRECTIONS: Show all work.

1. Consider the IVP: $y'' + 4y = 6\delta(t - 3\pi)$, $y(0) = 4$, $y'(0) = 0$.
 - (a) Solve this IVP using the Laplace Transforms. Write your solution as a piecewise-defined function.

(b) For $t > 3\pi$, find A , ω , and ϕ so that your solution is of the form: $y(t) = A \sin(\omega t + \phi)$.

(c) Graph your solution. What happens graphically at $t = 3\pi$?