

### Math 251 section 004 Quiz 3

Write your name and PSU ID here:

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Write your answers here:

1. D      2. C      3. C

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1. Find the form of a particular solution to the nonhomogeneous equation

$$y'' - 4y' + 4y = te^{2t}$$

- (a)  $Y = Ate^{2t}$     (b)  $Y = (At + B)te^{2t}$   
(c)  $Y = At^2e^{2t}$     (d)  $Y = (At + B)t^2e^{2t}$

2. A mass weighing 4lb stretches a spring 6 in. Neglect damping force. Find the period.

- (a)  $T = \pi$     (b)  $T = \pi/2$     (c)  $T = \pi/4$     (d)  $T = \pi/8$

3. Find one of the following equations which has  $y = 2e^t - t$  as a solution.

- (a)  $y''' + y'' - y' - y = 0$     (b)  $y''' + y' = 0$   
(c)  $y^{(4)} - y'' = 0$     (d)  $y^{(4)} - 2y'' + y = 0$