

Third Exam

Monday, March 9, 2009

This exam is closed book. Make sure your name is on all pages. Show all work, and show it in a logical and organized manner. Each entire problem is worth 32 points, and 4 points are “free.”

1. Find the general solution to

$$y'' + 4y' + 5y = 0.$$

2. Write

$$\frac{e^{(-2+i)t} - e^{(-2-i)t}}{2i}$$

in the form $a + bi$.

3. Solve the initial value problem

$$y'' + 4y = \sin(2t), \quad y(0) = 0, \quad y'(0) = 0.$$