Mathematics 352
Quiz 7

March 20, 2013; 10 minutes Name: _____

This quiz is *open-note*, but no books or calculators.

1. Verify *by plugging in* that $y_1(t) = \cos(2t)$ and $y_2(t) = \sin(2t)$ are solutions of the differential equation

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

Do they constitute a fundamental set of solutions? Justify your answer.

2. Find the solution of the initial value problem. Describe the behavior of this solution as $t \to \infty$.

$$y'' + 4y' + 5y = 0, \quad y(0) = 1, \quad y'(0) = 0$$