Name:

This quiz covers: 7.1 through 7.4 **DUE: Monday 4/16**

Directions: Complete all questions and **show all applicable work.** Partial credit will be given.

1.) Find the general solution to the differential equation $\frac{dy}{dx} = \sin(x)y$.

2.) Interest on a \$10,000 investment accrues at a rate of 6% each year, with continuous compounding. How many years will it take for the investment to reach \$15,000? Hint: The differential equation should not have \$10,000. This is rather the initial condition. Similarly for \$15,000, this condition is used to solve for t.

3.) Draw a direction field for the differential equation $\frac{dy}{dx} = 3y$. Draw 3 candidate solutions for the initial conditions $y(0) = 1$, $y(0) = 0$, and $y(0) = -1$.