

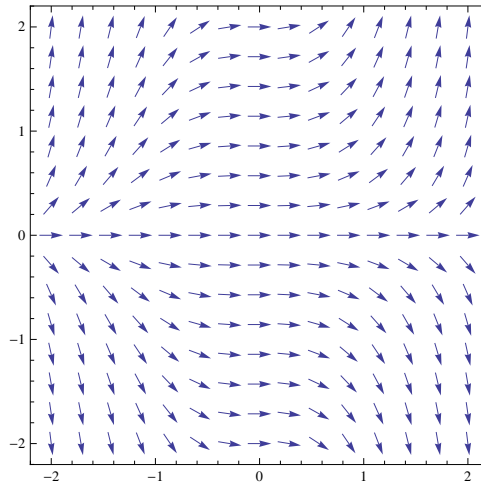
# Quiz 9

Name: \_\_\_\_\_

Directions: Answer each question to the best of your ability. You may use a calculator, but you must show all work to receive full credit.

1. State the order of the following differential equation:  $(y'')^3 - (y')^2 + y^5 = 0$  (2 pts)
2. How many constants will appear in the solution to the differential equation,  $y''' - y = 0$  (3 pts)
3. For what value of  $k$ , if any, is the equation  $y = e^{kt}$  a solution to the differential equation,  $y''' - 27y = 0$  for any value of  $t$ . (5 pts)

4. Which of the following differential equations will produce the given slope field? (5 pts)



- (a)  $y' = xy$
- (b)  $y' = x^2y$
- (c)  $y' = xy^2$
- (d)  $y' = x^2y^2$
- (e) None of the above

5. Using Euler's method, approximate  $y(4)$  using 2 steps given the differential equation  $y' = y$  and the initial condition that  $y(0) = 2$ . (5 pts)

6. What is the actual value of  $y(4)$  from the previous problem? (5 pts)