Math 1B, Quiz 9

Monday, April 13

1. (2 pts) Show that $y = 1 + 3x$ is a solution to the differential equation $y' = (y - 1)/x$.

2. (2 pts) Show that $y = e^{x^2 - x}$ is a solution to the differential equation $y' = 2xy - y$.

3. (3 pts) Find the solution to the differential equation $y' = x/y$, given $y(0) = 1$.

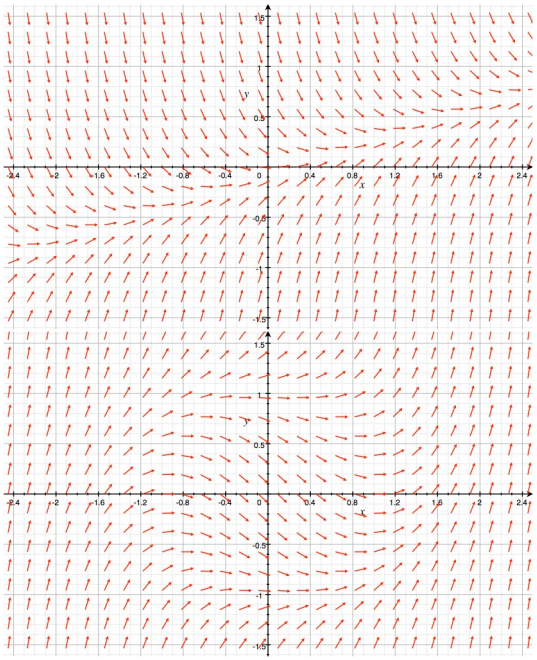
4. (3 pts) Match each of the differential equations with one of the direction fields shown below:

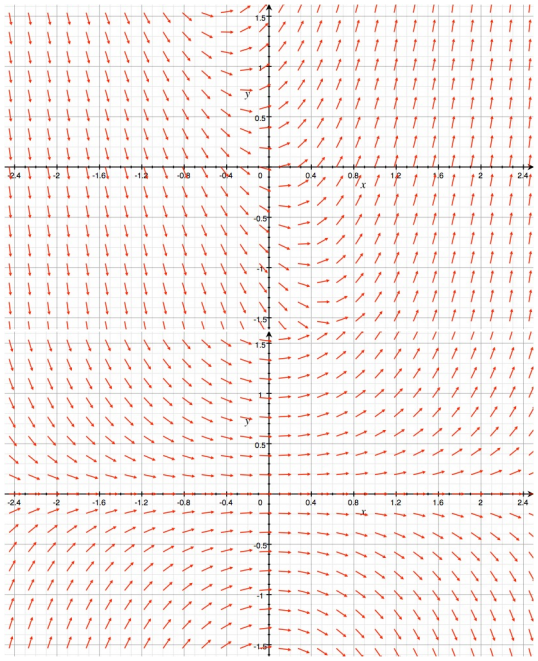
   (a) $y' = x^2 + y^2 - 1$

   (b) $y' = 3x + y$

   (c) $y' = x - 3y$

   (d) $y' = xy$





Extra Credit

1. (Zero points) If you pick an answer to this question at random, what is the chance that you will be correct?

   (a) 25%

   (b) 50%

   (c) 0%

   (d) 25%