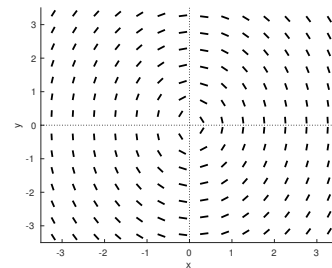


8. [16 points] Respond to each of the following, giving a *short—one sentence* explanation of your answer. **Note:** *little partial credit will be given on this problem.*

- a. [4 points] True or false: the slope field to the right corresponds to the differential equation $y' = x^2 + y^2$. Explain in one sentence.



Answer: _____

- b. [4 points] True or false: the function $y = C e^{-x}$, where C is an unspecified constant, is the general solution to $y'' + 2y' + y = 0$. Explain in one sentence.

Answer: _____

- c. [4 points] True or false: if we apply Euler's method and the improved Euler method to $y' = xy$, $y(0) = 0$ with step-size $h = 0.1$, both predict after one step that $y(0.1) = 0$. Explain in one sentence.

Answer: _____

- d. [4 points] True or false: the graph to the right, below, could be the solution to the differential equation $y' = a^2 y$ for some value of the constant a .

Answer: _____

