

Quiz #5

Directions: Carefully read each question below and answer to the best of your ability in the space provided. Your answer to problems should be written in a clear and concise manner. You **MUST** show your work to receive full credit!

1. (10 points) Consider the following differential equation

$$-2yy' = 2x + y$$

and points:

$$1) (0, 1), \quad 2) (2, 2), \quad 3) (-3, 3).$$

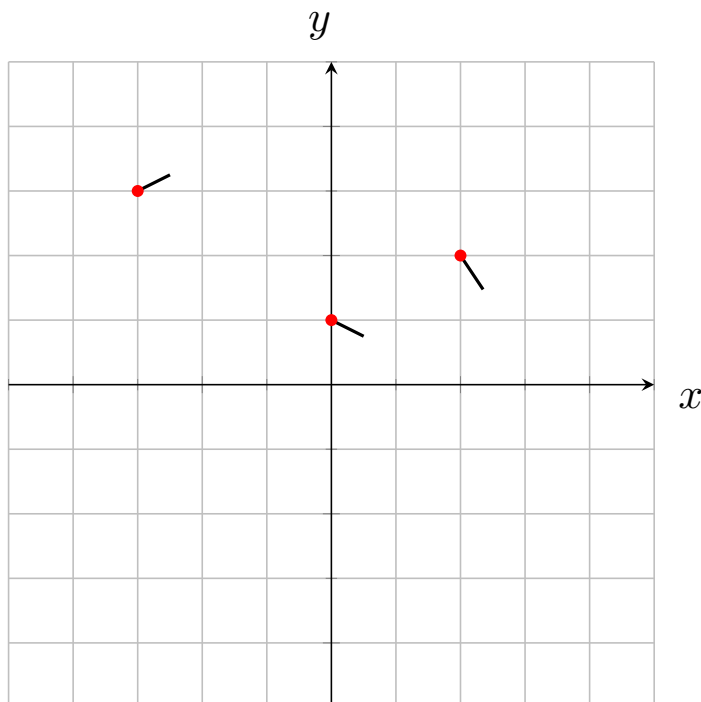
Find the value of the derivative and draw the corresponding direction vector for each of the above points.

Solution: The first step would be to rewrite the above differential equation in the form $y' = f(x, y)$, that is

$$y' = \frac{2x + y}{-2y} \tag{1}$$

Now we can evaluate (1) at the provided points:

$$1) \frac{dy}{dx}(0, 1) = -\frac{1}{2}, \quad 2) \frac{dy}{dx}(2, 2) = -\frac{3}{2}, \quad 3) \frac{dy}{dx}(-3, 3) = \frac{1}{2}.$$



Name: _____

Section (circle one): 001 002

Question:	1	Total
Points:	10	10
Score:		