

Quiz 5

24 September 2009

Show all work to support your solutions. Be sure to check your solutions. Represent all points in 2-space as ordered pairs.

Consider the line l determined by the points $(3, 4)$ and $(-6, 3)$.

1. (2 Points) Determine, if possible, the slope of l .

$$m = \frac{4 - 3}{3 - (-6)} = \frac{1}{9}$$

2. (2 Points) Write, if possible, a function f for the line l .

$$y - 4 = \frac{1}{9}(x - 3)$$

$$y = \frac{1}{9}x - \frac{1}{3} + 4 = \frac{1}{9}x - \frac{1}{3} + \frac{12}{3} = \frac{1}{9}x + \frac{11}{3}$$

$$f(x) := \frac{1}{9}x + \frac{11}{3}$$

3. (2 Points) Write a standard form equation for l with integer coefficients.

$$9y = x + 33$$

$$-x + 9y = 33$$

4. (2 Points) Determine the intercepts of l .

- x -intercepts ($y = 0$)

$$-x + 0 = 33$$

$$x = -33$$

$$(-33, 0)$$

- y -intercepts ($x = 0$)

$$0 + 9y = 33$$

$$y = \frac{11}{3}$$

$$\left(0, \frac{11}{3}\right)$$

5. (2 Points) Write equations for the lines parallel and perpendicular to l through the point $(-4, 8)$.

- parallel

$$y - 8 = \frac{1}{9}(x - (-4))$$

$$y - 8 = \frac{1}{9}(x + 4)$$

- perpendicular

$$y - 8 = -9(x - (-4))$$

$$y - 8 = -9(x + 4)$$