

### Quiz #3 Review Worksheet

1. Write the equation of the line in all three forms:  
 a. A line with a slope of 3 and a y-intercept of 7

Point-Slope Form:  $y - 7 = 3(x - 0)$   
 $y - y_1 = m(x - x_1)$

Slope-Intercept Form:  $y = 3x + 7$   
 $y = mx + b$

Standard Form:  $-3x + y = 7$   
 $Ax + By = C$

- b. A line that passes through the points (4,5) and (-5,-1)

$$m = \frac{-1 - 5}{-5 - 4} = \frac{-6}{-9} = \frac{2}{3}$$

$$3 \left[ y - 5 = \frac{2}{3}(x - 4) \right]$$

$$3y - 15 = 2(x - 4)$$

$$3y - 15 = 2x - 8$$

$$-2x + 3y = 7$$

$$3y = 2x + 7$$

$$y = \frac{2}{3}x + \frac{7}{3}$$

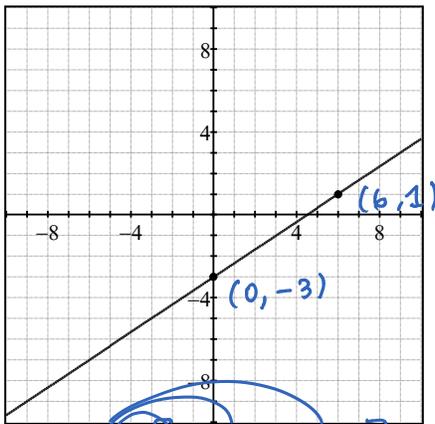
Point-Slope Form:  $y - 5 = \frac{2}{3}(x - 4)$   
 $y - y_1 = m(x - x_1)$

Slope-Intercept Form:  $y = \frac{2}{3}x + \frac{7}{3}$   
 $y = mx + b$

Standard Form:  $-2x + 3y = 7$   
 $Ax + By = C$

2. Write the equation of the line graphed below.

- a. In standard form



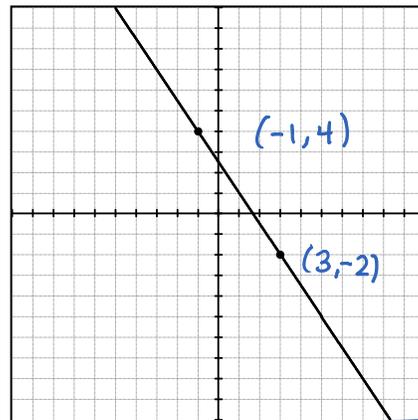
$$\frac{\uparrow 4}{\rightarrow 6} = \frac{2}{3}$$

$$3 \left[ y = \frac{2}{3}x - 3 \right]$$

$$3y = 2x - 9$$

$$-2x + 3y = -9$$

- b. In point-slope form



$$\frac{\downarrow 6}{\rightarrow 4} = -\frac{3}{2}$$

$$y - 4 = -\frac{3}{2}(x + 1)$$

OR

$$y + 2 = -\frac{3}{2}(x - 3)$$

3. Write the equation of the line that has x-intercept of -3 and y-intercept of 5 in slope-intercept form.

$$(-3, 0) \quad (0, 5)$$

$$m = \frac{5 - 0}{0 - (-3)} = \frac{5}{3}$$

$$y = \frac{5}{3}x + 5$$

4. Which of the following four equations represent the same line? Circle ALL that apply.

$$y = -\frac{1}{2}x + 4$$

$$x + 2y = 8$$

$$2y = -x + 8$$

$$y = -\frac{1}{2}x + 4$$

~~$$2 \left[ y - 5 = -\frac{1}{2}(x + 1) \right]$$

$$2y - 10 = -1(x + 1)$$

$$2y - 10 = -x - 1$$

$$\frac{2y}{2} = \frac{-x + 9}{2}$$

$$y = -\frac{1}{2}x + 4.5$$~~

$$3x + 6y = 24$$

$$\frac{6y}{6} = -\frac{3x}{6} + \frac{24}{6}$$

$$y = -\frac{1}{2}x + 4$$

5. Scott ordered a bouquet of flowers for his mom for Valentine's Day. He upped his game this year and ordered a dozen roses and five Gerber daisies to complete this generous bouquet.

a. If the total bill was \$25.45 (without tax), write an equation to represent much each kind of flower costs. Which form makes the most sense? Define your variables.

standard!  
 $x =$  price of roses  
 $y =$  price of daisies

$$12x + 5y = 25.45$$

b. If Gerber daisies cost \$1.25, how much was each rose?

$$12x + 5(1.25) = 25.45$$

$$12x = 19.2$$

$$x = 1.6$$

roses cost \$1.60 each

6. When you woke up yesterday, there was already 3 inches of snow on your driveway. It continued to snow at a rate of 2 inches every 5 hours for the rest of the day. slope! =  $\frac{\Delta y}{\Delta x} = \frac{2 \text{ in}}{5 \text{ hrs}}$

a. Write an equation to represent the total snow on your driveway as a function of time. Define your variables.

$x =$  # of hours  
 $y =$  # of in. of snow

$$y = \frac{2}{5}x + 3$$

b. How long after you've woken up was there 8 inches of snow on your driveway?

$$8 = \frac{2}{5}x + 3$$

$$\frac{5}{2} \cdot \frac{5}{1} = \left( \frac{2}{5}x \right) \frac{5}{2}$$

$$\frac{25}{2} = 12.5 = x$$

12.5 hours after you woke up