Name KEY Date

Quarterly Exam Review - Chapter 3 Algebra

1. Write an equation of a line that passes through the points (-4,0) and (2,6). $m = \frac{6-0}{2-(-4)} = \frac{6}{6} = 1$

$y - 0 = 1(x - (-4))$

$y = 1(x+4)$

$\boxed{y = x + 4}$

2. If the point (6,-8) is on the line of the equation y = -3x + b, what is the value of b?

x y

$-8 = -3(6) + b$ $\boxed{b = 10}$

$-8 = -18 + b$

$+18 \quad +18$

3. Write the equation of a line parallel to the y-axis that passes through the point (6,-10).

$x = 6$

4. Write the equation of a line parallel to the x-axis that passes through the point (5,7).

$y = 7$

5. Write an equation of a line passing through the point (8,-14) with a slope of -2.

$y - (-14) = -2(x - 8)$ $\boxed{y = -2x + 2}$

$y + 14 = -2x + 16$

$-14 \quad -14$

6. Solve for y. Write answers in slope-intercept form.

a) $5y + 10x = 25$

$-10x \quad -10x$

$\frac{5y}{5} = \frac{-10x}{5} + \frac{25}{5}$

$\boxed{y = -2x + 5}$

b) $3y - 2x = 9$

$+2x \quad +2x$

$\frac{3y}{3} = \frac{2x}{3} + \frac{9}{3}$

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

c) $8y - 24 = -4x$

$+24 \quad +24$

$\frac{8y}{8} = \frac{-4x}{8} + \frac{24}{8}$

$\boxed{y = -\frac{1}{2}x + 3}$

d) $\frac{10y}{10} = \frac{-6x}{10} - \frac{60}{10}$

$\boxed{y = -\frac{3}{5}x - 6}$

7. At a local bakery, muffins cost $1.75 each and cookies cost $4 per pound. If Donna has $20 to spend at the bakery, write an inequality that represents the number of muffins, x, and pounds of cookies, y, she could buy? $1.75x + 4y \leq 20$

8. Which of the following equations has an average rate of change of 3?

rate of change

a) $3y + 9x = 12$

$-9x \quad -9x$

$y = -3x + 4$

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

b) $\frac{3y}{3} = \frac{9x}{3} + \frac{12}{3}$

$y = 3x + 4$

rate of change

c) $\frac{8y}{8} = \frac{9}{8} + \frac{12x}{8}$

$y = 3 + 4x$

rate of change

d) $3y + 9 = 12x$

$-9 \quad -9$

$\frac{3y}{3} = \frac{12x}{3} - \frac{9}{3}$

$y = 4x - 3$

rate of change

9. Write the equation of a line with a zero slope passing through the point (2,6).

$y = 6$

10. Write the equation of a line with an undefined slope passing through the point (5,-11).

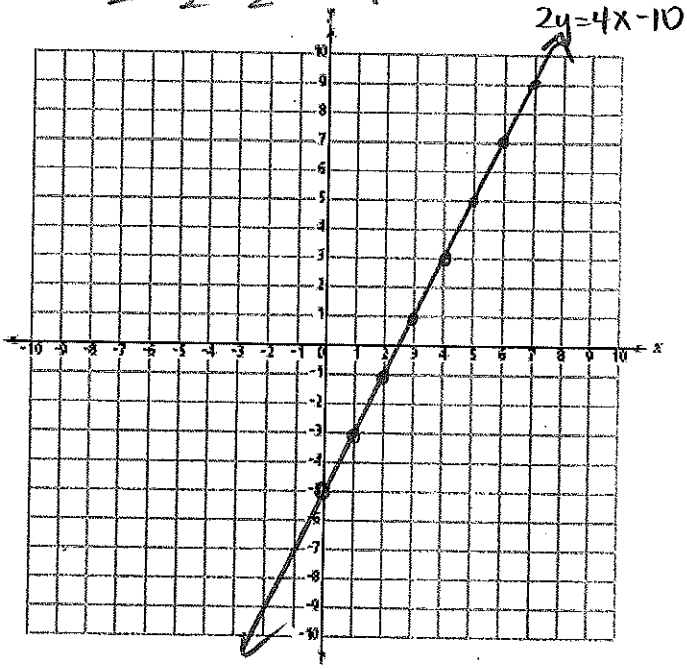
$x = 5$

11. Laura sells painted shells and handmade necklaces. Painted shells, p, cost $6 each and the handmade necklaces, n, cost $8 each. If Laura must make at least $300 selling these items, write an inequality that could allow her to figure out how many of each item she must sell in order to reach her goal.

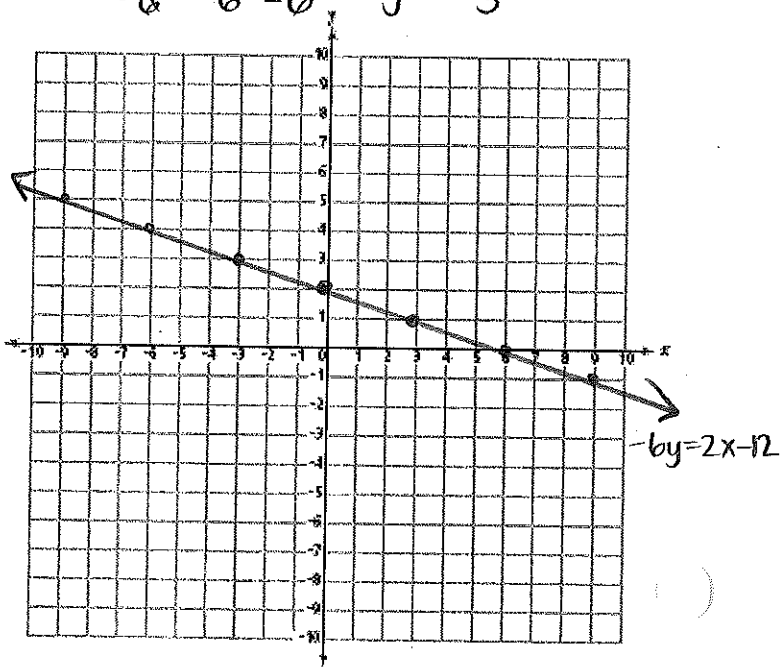
$6p + 8n \geq 300$

12. Graph each linear equation on the graph provided.

a) $\frac{2y}{2} = \frac{4x}{2} - \frac{10}{2}$ $y = 2x - 5$



b) $\frac{-6y}{-6} = \frac{2x}{-6} - \frac{12}{-6}$ $y = -\frac{1}{3}x + 2$



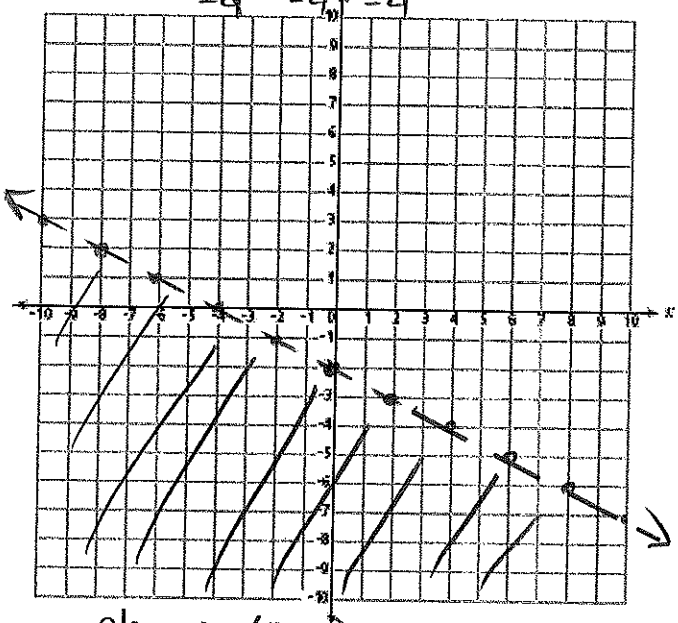
13. Graph each linear inequality on the graph provided.

a) $5 - 4y > 2x + 13$

$-5 \quad -5$

$\frac{-4y}{-4} > \frac{2x + 8}{-4}$

$y < -\frac{1}{2}x - 2$



Check (0,0)

$5 - 4(0) > 2(0) + 13$

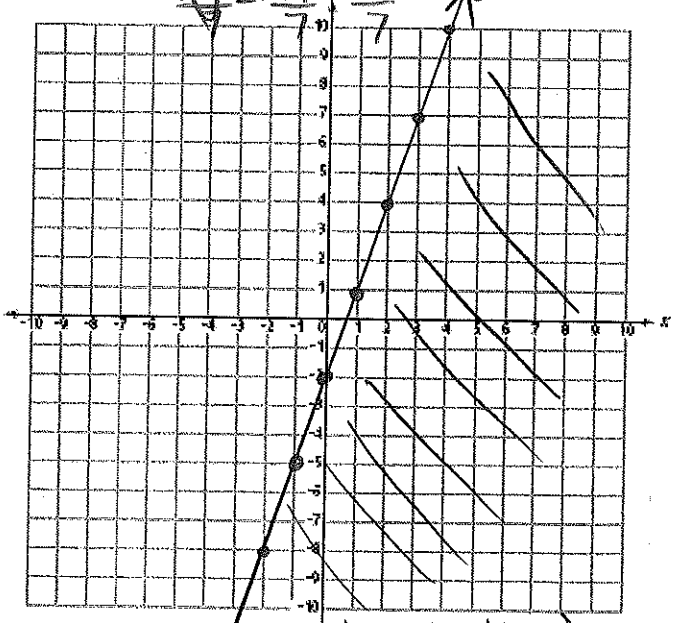
$5 > 13$ False

b) $7y + 14 \leq 21x$

$-14 \quad -14$

$\frac{7y}{7} \leq \frac{21x - 14}{7}$

$y \leq 3x - 2$



Check (0,0)

$7(0) + 14 \leq 21(0)$

$14 \leq 0$ False