Algebra 1-2 Name Key

Unit 5B Study Guide

Date _____ Period ____

Write the slope-intercept form of the equation of each line.

1) $6x + 7y = -56$

$-6x \quad -6x$

$\frac{7y}{7} = \frac{-6x}{7} - \frac{56}{7}$

$y = -\frac{6}{7}x - 8$

2) $2x - 7y = 14$

$-2x \quad -2x$

$\frac{-7y}{-7} = \frac{-2x}{-7} + \frac{14}{-7}$

$y = \frac{2}{7}x - 2$

3) $x + 5y = -35$

$-x \quad -x$

$\frac{5y}{5} = \frac{-x}{5} - \frac{35}{5}$

$y = -\frac{1}{5}x - 7$

4) $x + 2y = -14$

$-x \quad -x$

$\frac{2y}{2} = \frac{-x}{2} - \frac{14}{2}$

$y = -\frac{1}{2}x - 7$

Write the standard form of the equation of each line.

5) $y = -x - 3$

$+x \quad +x$

$x + y = -3$

6) $y = \frac{2}{3}x$

$-x \quad -x$

$3(0 = \frac{2}{3}x - y)$

$0 = 2x - 3y$

7) $y = \frac{11}{6}x - 6$

6

$6y = 11x - 36$

$-11x \quad -11x$

$-11x + 6y = -36$

8) $y = \frac{2}{5}x + 1$

5

$5y = 2x + 5$

$-2x \quad -2x$

$-2x + 5y = 5$ or $2x - 5y = -5$

Identify the x-intercept and y-intercept.

9) $x - y = 4$

x int: $(4, 0)$ $x - 0 = 4$

y int: $(0, -4)$ $0 - y = 4$

10) $x + 3y = 12$

x-int: $(12, 0)$ $x + 3(0) = 12$

y int: $(0, 4)$ $(0) + 3y = 12$

11) $5x + 3y = -15$

x int: $(-3, 0)$ $5x + 3(0) = -15$

y int: $(0, -5)$ $5(0) + 3y = -15$

12) $3x + 2y = -6$

x int: $(-2, 0)$ $3x + 2(0) = -6$

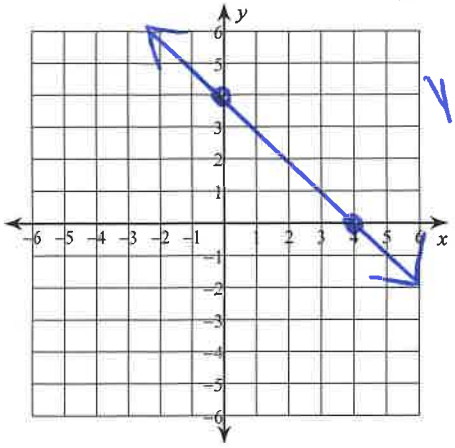
y int: $(0, -3)$ $3(0) + 2y = -6$

Sketch the graph of each line.

13) $x + y = 4$

xint: (4,0)

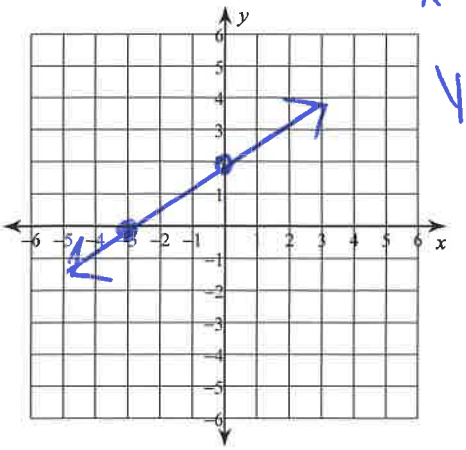
yint: (0,4)



14) $2x - 3y = -6$

xint: (-3,0)

yint: (0,2)

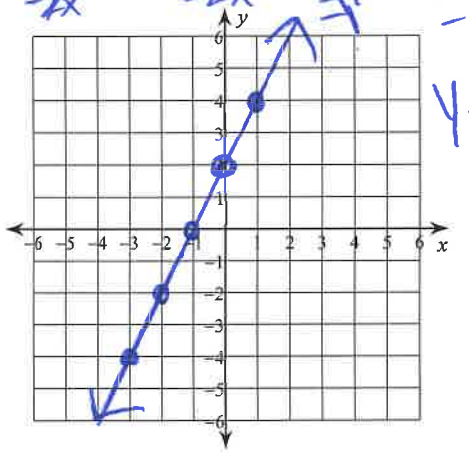


15) $2x - y = -2$

$-2x \quad -2x$

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

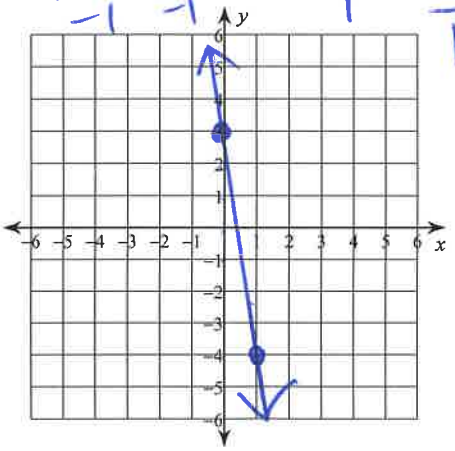
$y = \frac{2}{1}x + 2$



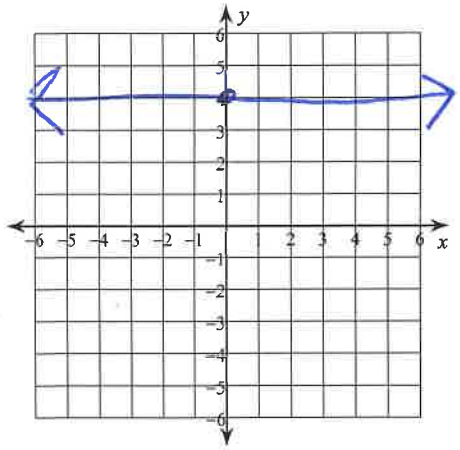
16) $7x - 3 = -y$

$\frac{-3}{-1} = \frac{-y}{-1}$

$y = \frac{-7x+3}{1}$



17) $y = 4$ horizontal line!

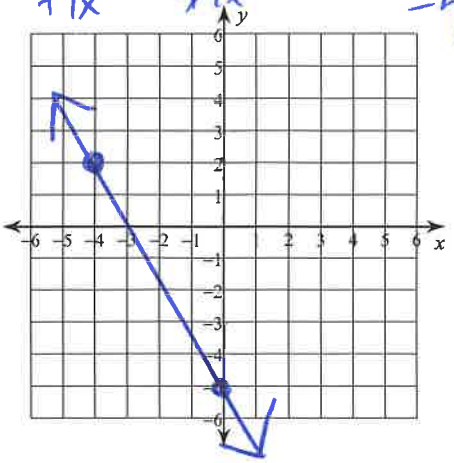


18) $20 = -4y - 7x$

$+7x \quad +7x$

$\frac{7x+20}{-4} = \frac{-4y}{-4}$

$y = -\frac{7}{4}x - 5$



19) You are preparing a fruit salad with pineapples (x), which have 3 grams of carbs, and watermelon (y), which has 2 grams of carbs. You want a total of 24 grams of carbs in the fruit salad. Write an equation to represent the scenario. Then find your intercepts and explain their meaning.

Equation: $3x + 2y = 24$

x-intercept: 8, total # of pineapples if you don't use watermelon

y-intercept: 12, total # of watermelon if you don't use pineapple

20) You are selling tickets to a school talent show, where student tickets (x) are \$6 and adult tickets (y) are \$8. You made a total of \$600. Write an equation to represent the scenario. Then find your intercepts and explain their meaning.

Equation: $6x + 8y = 600$

x-intercept: 100, total # of students if NO adults came

y-intercept: 75, total # of adults if NO students came

Write the slope-intercept form of the equation of the line described. $y - y_1 = m(x - x_1)$

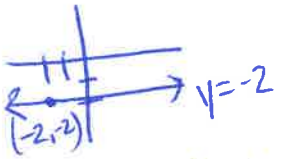
21) through: $(-1, -4)$, parallel to $y = -7x$

$y + 4 = -7(x + 1)$

$y + 4 = -7x - 7$

$y = -7x - 11$

22) through: $(-2, -2)$, parallel to $y = -3$ horiz. line



$y = -2$ so par. would also be horiz.

23) through: $(4, -2)$, parallel to $y = \frac{1}{2}x + 3$

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

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

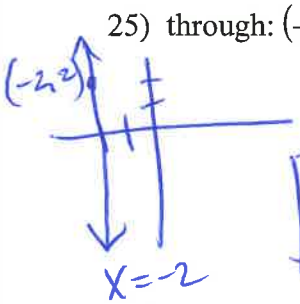
$y = \frac{1}{2}x - 4$

24) through: $(-1, 0)$, perp. to $y = -x - 1$ $m = +1$

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

$y = x + 1$

25) through: $(-2, 2)$, perp. to $x = 0$ vertical line so perp would be horiz.



$x = -2$

26) through: $(-1, 0)$, perp. to $y = \frac{1}{3}x + 1$ $m = -\frac{3}{1}$

$y - 0 = -3(x + 1)$

$y = -3x - 3$