math website: mrsmithsonsixthgrademath.weebly.com

Answers to review are on website.

Name: Key

Chapter 3 Review- M

Write the correct term on the line.

Unit rate 1. rate which has a second term of 1 unit **(unit rate, rise)**

rate 2. ratio in which the units of the quantities being compared are different **(rate, rise)**

rise 3. the vertical change from one point to another point on a graph **(rise, run)**

rate of change 4. phrase used when a ~~rate~~ is used to describe a rate of increase (or decrease) in a real-life situation **(rate of change, unit rate)**

run 5. the horizontal change from one point to another point on a graph **(run, rise)**

Define the term and give an example.

6. slope

Definition: The slope of the line represented ($y=3x+4$) is 3

Example: $y=3x+4$ $m=3$

7. slope-intercept form

Definition: The equation used to find the slope or y-intercept of a line.

Example: $y=3x+4$ is written as $y=mx+b$

8. y-intercept

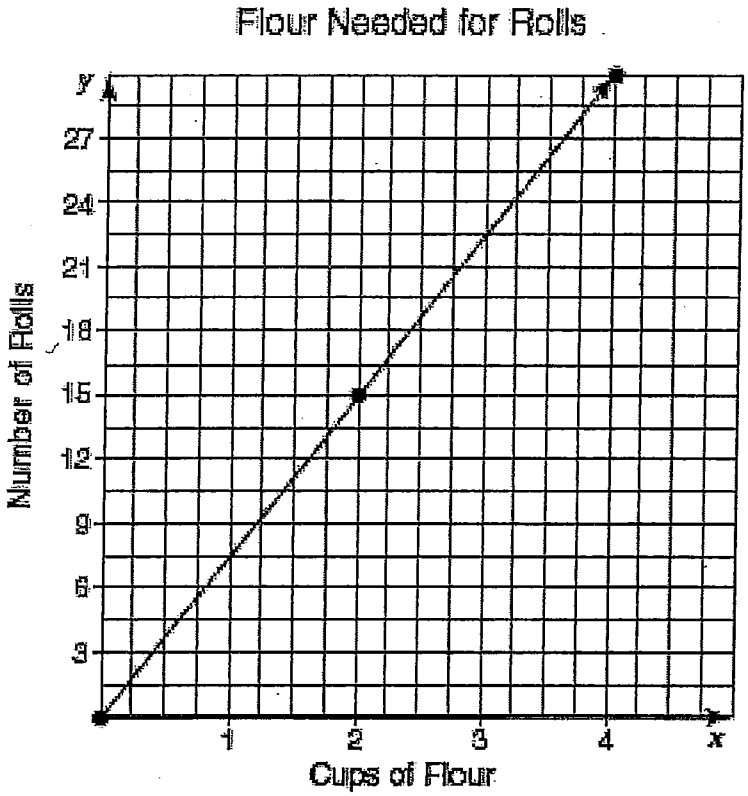
Definition: The point where a line crosses the y-axis.

Example: $y=3x+4$ $b=4$

Name: Key

Chapter 3 Review- M

1. The graph shows the number of cups of flour needed for making rolls.



a. What is the rate of change?

a. Point #1-(2, 15); Point #2-(4, 30)

b. $\frac{\text{Y2-Y1}}{\text{X2-X1}} \rightarrow \frac{30 - 15}{4 - 2} \rightarrow \frac{15 \text{ Rolls}}{2 \text{ Cups of Flour}}$

b. What is the unit rate?

$\frac{15 \text{ Rolls}}{2 \text{ Cups of Flour}} \rightarrow \frac{7.5 \text{ Rolls}}{1 \text{ Cups of Flour}}$

c. Determine the number of cups of flour needed to make 75 rolls for a dinner party. Show your work.

$\frac{7.5 \text{ Rolls}}{1 \text{ Cups of Flour}} \rightarrow \frac{75 \text{ Rolls}}{10 \text{ Cups of Flour}}$

Name: Key

3. The table shows the points the Bulldogs scored after various minutes of game play have elapsed.

Number of Minutes of Game Played	Number of Points Scored
5	10
8	16
14	28
22	44

1. 8 - 5= 3
2. 14 - 8= 6
3. 22 - 14= 8

1. 16 - 10= 6
2. 28 - 16= 12
3. 44 - 28= 16

a. Calculate the rates of change.

$\frac{Y}{X}$ $\frac{6}{3} = \frac{2}{1}$ #1 $\frac{12}{6} = \frac{2}{1}$ #2 $\frac{16}{8} = \frac{2}{1}$ #3

b. Explain why the graph is linear.

Because the rate of change is the same for all 3 points.

4. Solve for Y. Determine the *y*-intercept (b) and slope (m).

a. $y=mx+b$

$-9x + 2y = -36$

$+9x \qquad +9x$

$$\frac{2y}{2} = \frac{9x}{2} - \frac{36}{2}$$

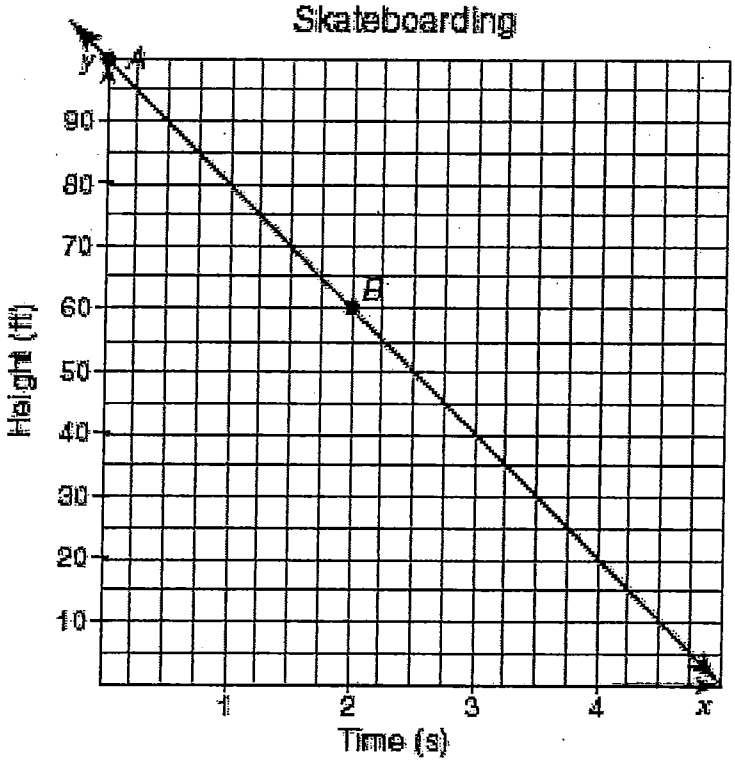
$$y = \frac{9}{2}x - 18$$

a. b= -18

b. m= $\frac{9}{2}$

Name: Key

2. Kodiak is riding her skateboard down a hill, as shown on the graph.



a. Point A is where she Starts. **(starts, ends)**

b. Point B is where she is after 2 seconds.

c. How many seconds will it take Kodiak to reach the bottom of the hill? Use the graph.

5 Seconds

d. How many feet down the hill is Kodiak skateboarding per second?

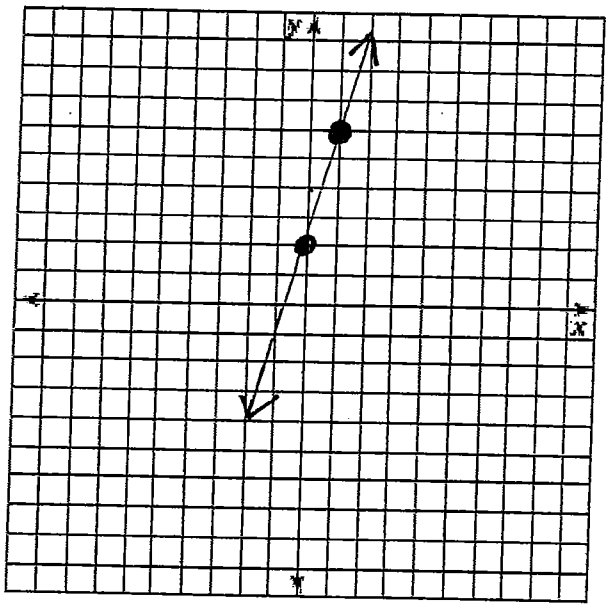
a. Point #A-(0, 100); Point #B-(2, 60)

b. $\frac{Y2-Y1}{X2-X1} \rightarrow \frac{60 - 100}{2 - 0} \rightarrow \frac{-40 \text{ Feet}}{2 \text{ Second}} \rightarrow \frac{-20 \text{ Feet}}{1 \text{ Second}}$

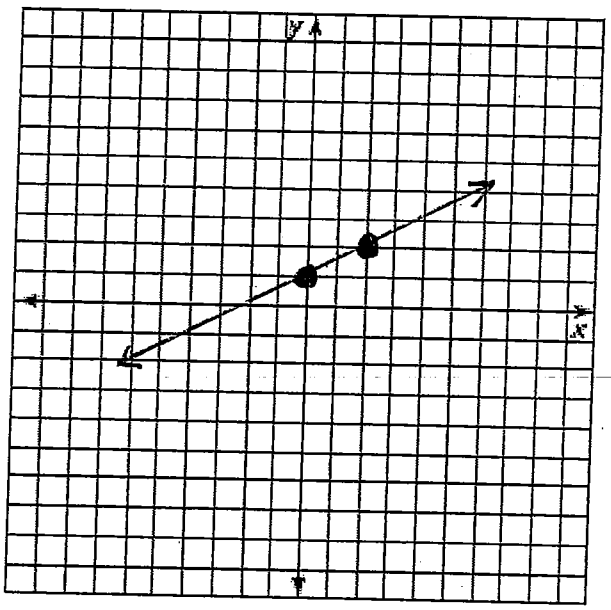
Name: Key

Determine the slope and y-intercept. Then graph the equation.

10. $y = 4x + 2$ M= $\frac{4}{1}$ B= 2



11. $y = \frac{1}{2}x + 1$ M= $\frac{1}{2}$ B= 1



Name: Key

Determining the Slope (m) and y-Intercept (b).

5. Calculate the y-intercept of each line when given the slope and one point that lies on the line. Show your work. (Remember to use y=mx+b)

a: $m = 2$; (5, 6)

$6 = 2(5)+b$

$6 = 10+b$

$-10 \quad -10$

$-4 = b$

6. Write the equation of a line using the given two points that lie on the line. Find slope and then the y-int, use y=mx+b.

a. (-2, -3), (8, -8)

$\frac{Y2-Y1}{X2-X1} \rightarrow \frac{-8-(-3)}{8-(-2)} \rightarrow \frac{-5}{10} \rightarrow \frac{-1}{2}$ (simplify) $\quad m = \frac{-1}{2}$

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y=mx+b $\quad m = \frac{-1}{2}$ $\quad (-2, -3)$ (x, y)

$-3 = \frac{-1}{2}(-2)+b$

$-3 = 1+b$

$-1 \quad -1$

$-4 = b$

$\frac{-1}{2} \cdot \frac{-2}{1} = \frac{2}{2} = 1$

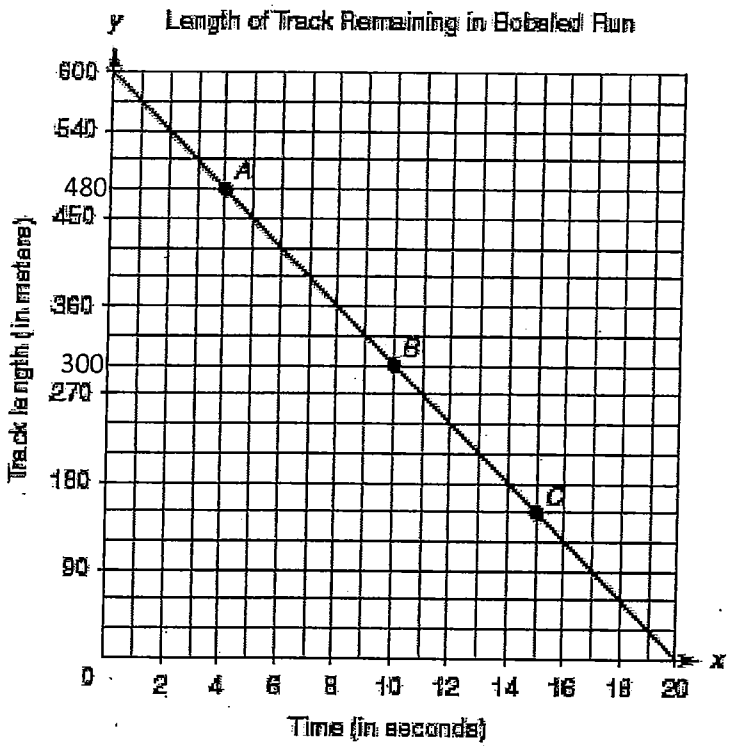
Name: Key

Write the slope for the graph. Remember to reduce and label!

7. Use the graph to write a rate that compares the track length to the change in time between point *A and point B*.

   a. Point #A-(4, 480); Point #B-(10, 300)

   b. $\frac{Y2-Y1}{X2-X1} \rightarrow \frac{300-480}{10-4} \rightarrow \frac{-180 \text{ Meters}}{6 \text{ Second}}$



Determine the slope (m) and y-intercept (b) of the line represented by each equation.

Combine like terms.
Put into slop intercept form (y=mx+b).

8. $y = 4x + 5 + 2x$ M= 6

   $y = 6x + 5$ B= 5

9. $y = 3x + 8 - 12x$ M= -9

   $y = -9x + 8$ B= 8