

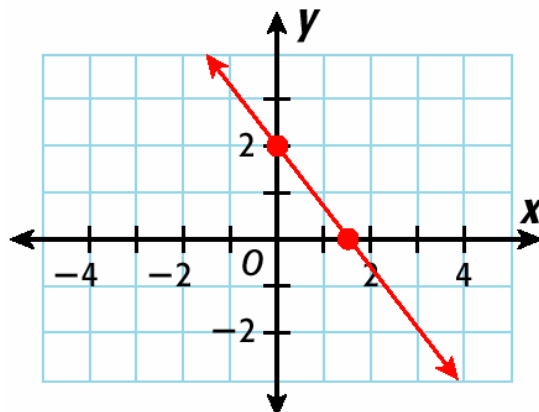
Name _____

Date _____

Math 8: Equation of a Line

1. Write the coordinates of the two points.

2. Find the slope of the line.

3. What are the two y-values of the points?
What is the difference between them?4. What are the two x-values of the points?
What is the difference between them?

5. What do you notice?

If you know any two points on a line, or two solutions of a linear equation, you can find the slope of the line without graphing. The slope of a line through the points (x_1, y_1) and (x_2, y_2) is as follows:

$$\frac{y_2 - y_1}{x_2 - x_1} = m \text{ (slope)}$$

6. Find the slope of the line that passes through $(-2, -3)$ and $(4, 6)$.7. Find the slope of the line that passes through $(-4, -6)$ and $(2, 3)$.

The rental cost of housing starts with a \$150 deposit and \$650 per month thereafter.

8. Create a table of values for the costs of renting for 0, 1, 2, and 3 months time.

9. What is the rate of change (m) for this function?

Time (months)	Cost (\$)
0 mo.	
1 mo.	
2 mo.	
3 mo.	

With direct variation, the equation of the line was $y=kx$, where k is the constant of proportionality. This function always passes through $(0,0)$.

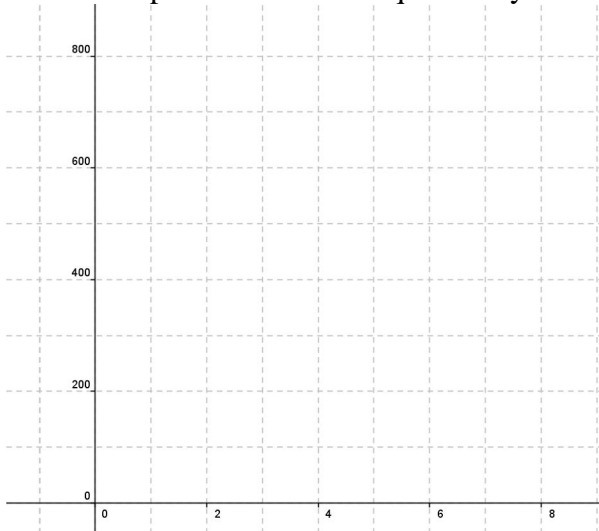
10. How could you write the equation of the line for renting if it will not pass through $(0,0)$?

In an equation written in **slope-intercept form**, $y = mx + b$, m is the slope and b is the y-intercept.

$$y = mx + b$$

↑ ↑
Slope y-intercept

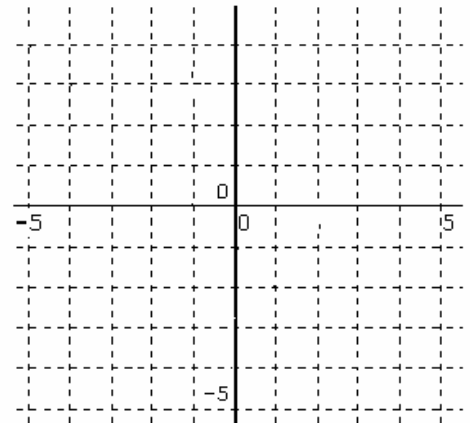
11. Graph the line of the equation: $y = 650x + 150$.



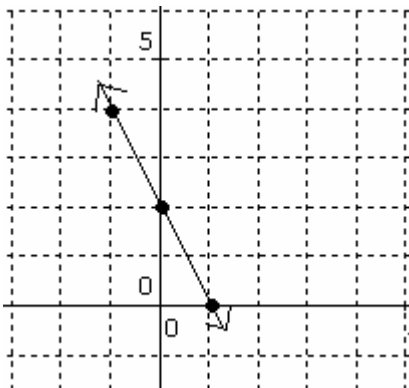
Steps for Plotting a Line from Slope-Intercept Form:

- 1.
- 2.
- 3.

Example:



12. Write the equation from the graph.



13. Write the equation from the graph.

