

Slope-Intercept Form Part 2

April-24-17
2:22 PM

Mathematics 9 Linear Relations Slope-Intercept Form Part 2

A. Definitions

1. slope: ratio of the vertical change (rise) to the horizontal change (run) of a line or a line segment.

$$\text{Slope} = \frac{\text{Rise}}{\text{Run}}$$

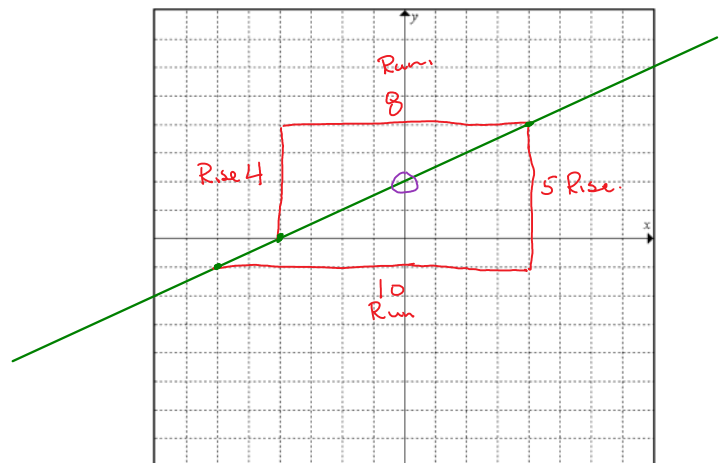
2. y-intercept: the y-coordinate of the point where a line or curve crosses the y-axis. It is the value of y when $x=0$.

B. Determining Slope and Y-intercept

Examples

- 1) The following points are located on the line. Draw and label the line and then determine the slope and the coordinates of the y-intercept.

x	y
-4	0
4	4
-6	-1



$$\text{Slope} = \frac{\text{Rise}}{\text{Run}}$$

$$\text{Slope} = \frac{5}{10} = \frac{1}{2}$$

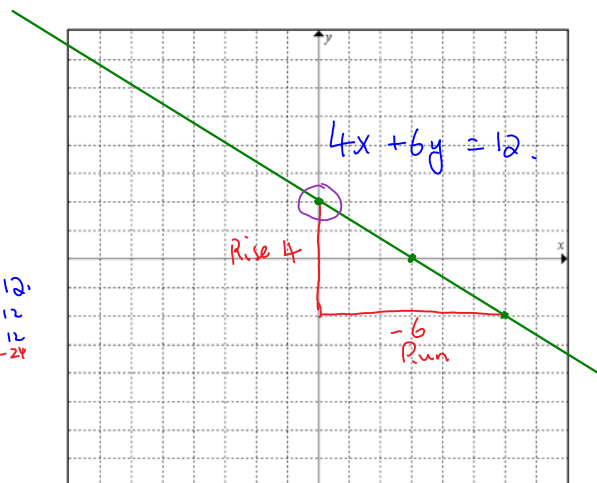
$$\text{y-int } (0, 2)$$

- 2) For the following linear equation, create a table of values of 3 acceptable points, graph and label the linear equation, and then determine the slope and the coordinates of the y-intercept.

$$4x + 6y = 12$$

x	y
3	0
0	2
6	-2

$$\begin{array}{l}
 4x + 6y = 12 \\
 4(0) + 6y = 12 \\
 6y = 12 \\
 y = 2
 \end{array}$$



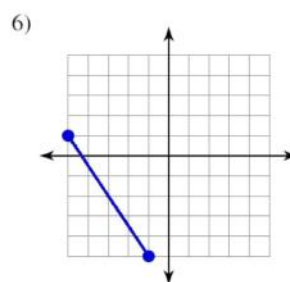
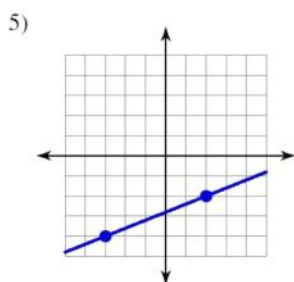
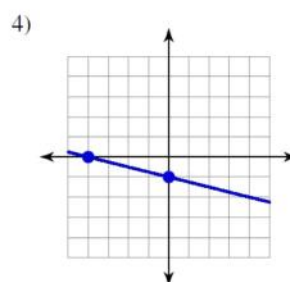
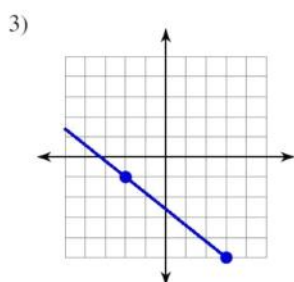
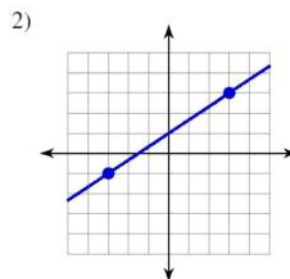
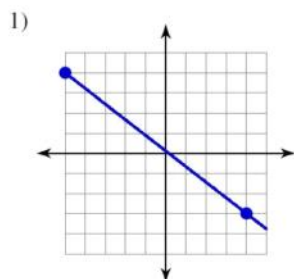
$$\begin{array}{l}
 \text{slope} = \frac{\text{Rise}}{\text{Run}} \\
 \text{slope} = \frac{4}{-6} = \boxed{-\frac{2}{3}} \\
 \text{y-int } (0, 2)
 \end{array}$$

Assignment : Slope-Intercept Form Part 2 Assignment

Name: _____

Slope-Intercept Form Part 2 Assignment

A. Find the slope of the following lines.



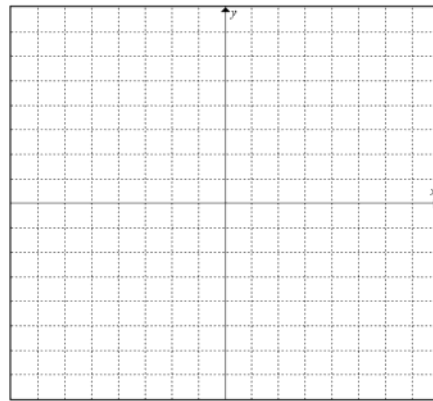
B. For equation $y = -\frac{3}{4}x + b$, what is the value of b if the line passes through the point $(8, -5)$?

C. For the equation $y = mx - 5$, what is the value of m if the line passes through the point $(4, 7)$?

D. The following points are located on the line. Draw and label the line and then determine the slope and the coordinates of the y-intercept.

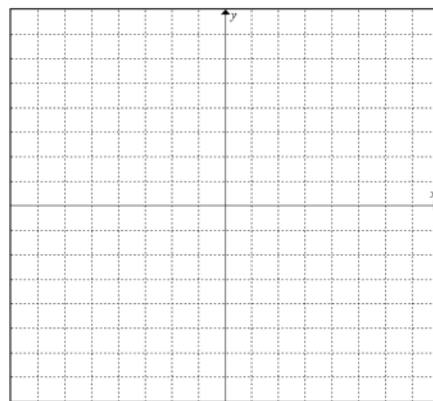
1)

x	y
-4	0
4	4
-6	-1



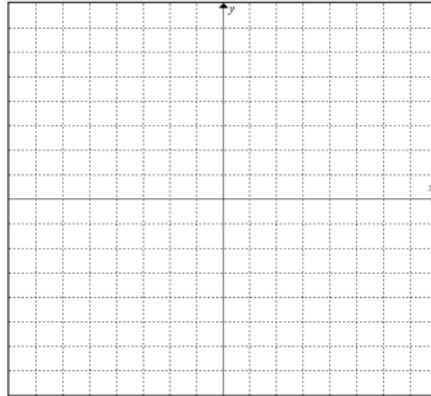
2)

x	y
-6	3
-3	1
6	-5



3)

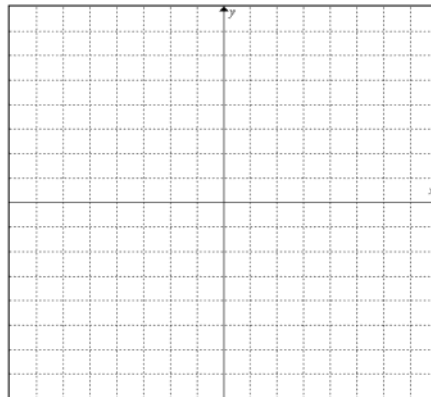
x	y
-3	-7
3	1
6	5



E. For the following linear equation, create a table of values of 3 acceptable points, graph and label the linear equation, and then determine the slope and the coordinates of the y-intercept.

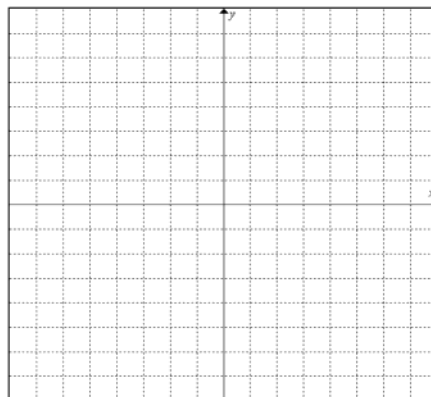
1) $x - 3y = 12$

x	y



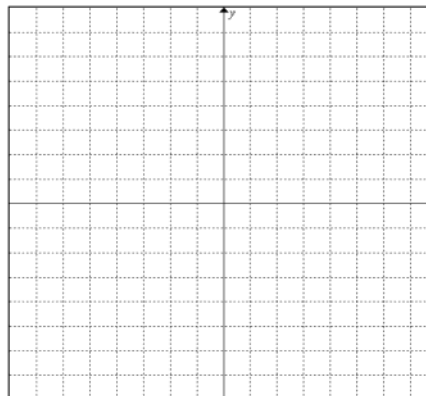
2) $2x + 4y = -8$

x	y



3) $2x + y = 6$

x	y



Answers

- A. 1) $Slope = -\frac{7}{9}$ 2) $Slope = \frac{2}{3}$
- 3) $Slope = -\frac{4}{5}$ 4) $Slope = -\frac{1}{4}$
- 5) $Slope = \frac{2}{5}$ 6) $Slope = -\frac{3}{2}$
- B. $b = 1$
- C. $m = 3$
- D. 1) $Slope = \frac{1}{2}$ 2) $Slope = -\frac{2}{3}$ 3) $Slope = \frac{4}{3}$
 $y - \text{int}(0, -4)$ $y - \text{int}(0, -1)$ $y - \text{int}(0, -3)$
- E. 1) $Slope = \frac{1}{3}$ 2) $Slope = -\frac{1}{2}$ 3) $Slope = -2$
 $y - \text{int}(0, 2)$ $y - \text{int}(0, -2)$ $y - \text{int}(0, 6)$