

Name: _____ Date: _____

Slope Practice

Venn Diagrams and Coordinate Planes

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$$

Use the coordinates provided to find each slope. Show your work.

1. (2, 0); (7, 2)

slope = _____

2. (-4, -2); (-7, -3)

slope = _____

3. (1, 5); (2, -2)

slope = _____

4. (-5, 4); (-3, 3)

slope = _____

5. (8, 6); (6, 8)

slope = _____

6. (5, -5); (2, -1)

slope = _____

7. (7, 9); (-5, -6)

slope = _____

8. (-8, -10); (-4, -4)

slope = _____

9. (12, 10); (1, 4)

slope = _____

10. (-7, 3); (-5, -6)

slope = _____

Linear equations using slope-intercept form

Writing Linear Equations

Remember, the slope-intercept form of a linear equation is $y = mx + b$, where m is the slope and b is the y -intercept. To write an equation of a line in this form, you would need the slope and the y -intercept of the line.

$$m = 2, y\text{-int.} = 4$$

$$y = mx + b$$

$$y = 2x + 4$$

$$m = -4, y\text{-int.} = -9$$

$$y = mx + b$$

$$y = -4x - 9$$

$$m = -1, y\text{-int.} = 11$$

$$y = mx + b$$

$$y = -x + 11$$

Note: In the third example, the slope is -1 . Only $-x$ is written. If the slope was 1 , only x would be written. The coefficient 1 is simply understood to be there and usually is not written.

State the slope and y -intercept of each line below.

1. $y = -2x + 5$

2. $y = -8x$

3. $2 + y = -x$

4. $-9 + y = x$

5. $y = 7$

6. $y = 2x - 7$

7. $-6 + y = 4x$

8. $y = -x$

Write an equation of the line given its slope and y -intercept.

9. $m = 4, y\text{-int.} = -1$

10. $m = 0, y\text{-int.} = 7$

11. $m = -2, y\text{-int.} = -5$

12. $m = -\frac{1}{4}, y\text{-int.} = -3$

13. $m = \frac{1}{2}, y\text{-int.} = -6$

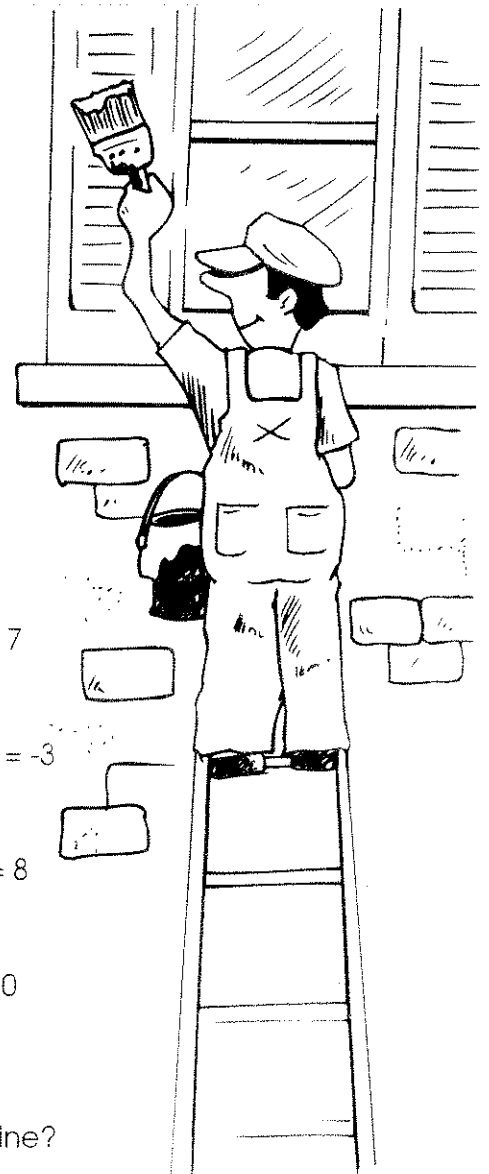
14. $m = -1, y\text{-int.} = 8$

15. $m = 1, y\text{-int.} = 2$

16. $m = 4, y\text{-int.} = 0$

17. What is the name of the $y = mx + b$ form of an equation of a line?

18. Is 7 the x -intercept or y -intercept of the line $y = -4x + 7$?



Finding Slope

Venn Diagrams and Coordinate Planes

Slope—the measure of the steepness or incline of a line

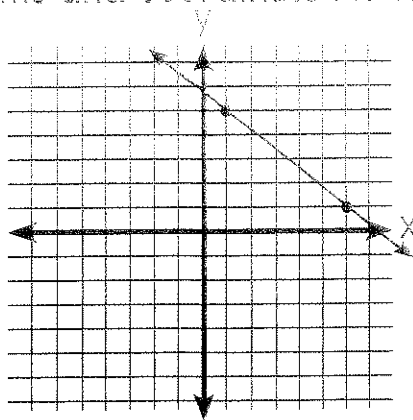
You can find the slope of a line by using the coordinates of any two points it passes through.

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1} \quad (\text{where } \Delta = \text{change in,}$$

y_2 and y_1 = y-coordinates, and x_2 and x_1 = x-coordinates)

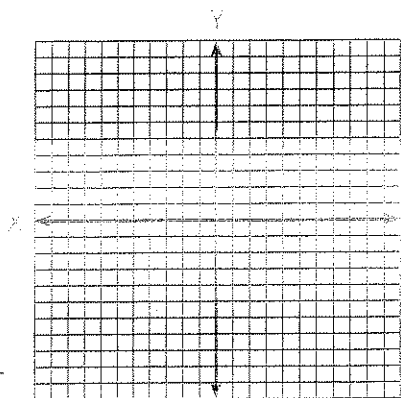
The line passes through the points (1, 5) and (6, 1).

$$\text{slope} = \frac{\Delta y}{\Delta x} = \frac{1 - 5}{6 - 1} = -\frac{4}{5}$$



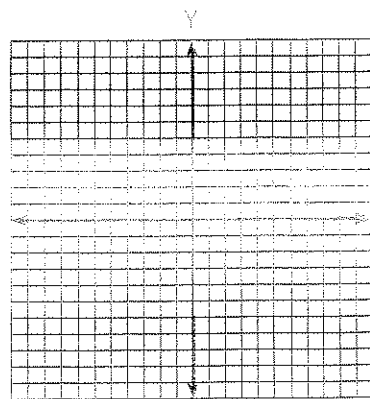
Plot each pair of points and draw a line through them. Then, find each slope. Reduce each slope to its lowest terms.

1. (3, 4); (0, 0)



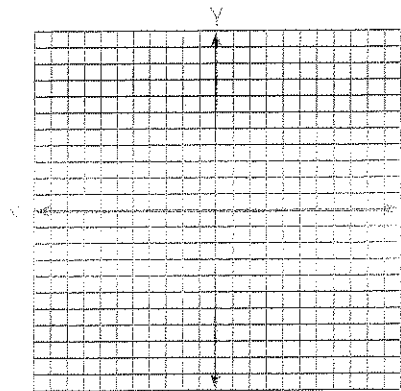
slope = _____

2. (2, 5); (1, 4)



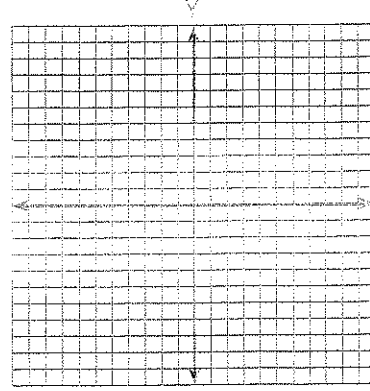
slope = _____

3. (0, 4); (-6, -8)



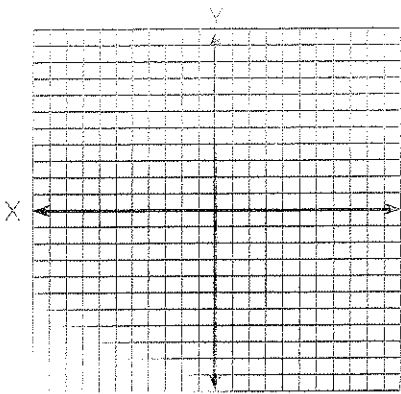
slope = _____

4. (-5, 9); (-1, 1)



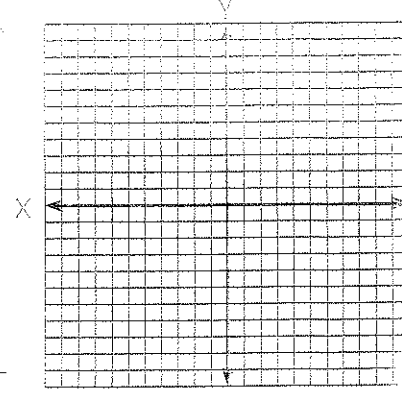
slope = _____

5. (-4, 5); (-8, 3)



slope = _____

6. (1, 5); (-3, -3)



slope = _____

Slope Worksheet 2

Name _____

Given 2 points find the slope using the slope formula. Show all work.

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

1. (1,2) and (7, 9)

2. (-5, 3) and (-1,0)

3. (5,-1) and (9, 3)

4. (6,2) and (6,-5)

5. (12,5) and (9,8)

6. (-3,-7) and (-8, -1)

7. (2,-5) and (7,-5)

8. (2, $\frac{3}{4}$) and (4, $\frac{1}{4}$)

9. ($\frac{1}{2}$, $\frac{2}{3}$) and (0, $\frac{1}{3}$)

10. (3,-5) and (0,0)