

## Slope Worksheet and Activity

### I. Student Exploration.

*Exploring slope formula using an online interactive program.*

### II. Model Problems

*Modeling how to calculate slope (associated online demonstration [here](#))*

### III. Practice Problems

*Student practice calculating slope (answers to problems online [here](#))*

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**Part I . Exploratory Activity**

1) Go to the following web page <http://www.mathwarehouse.com/slope>

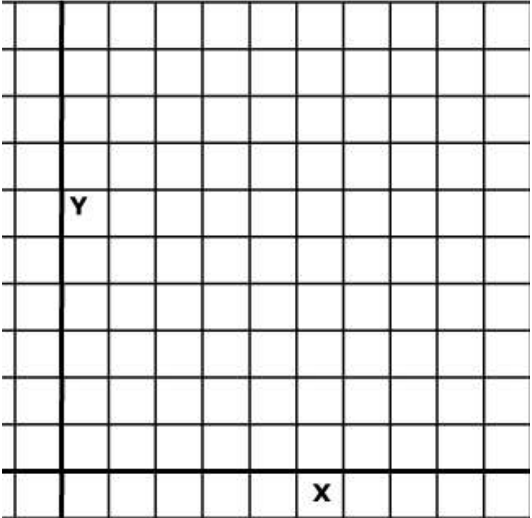
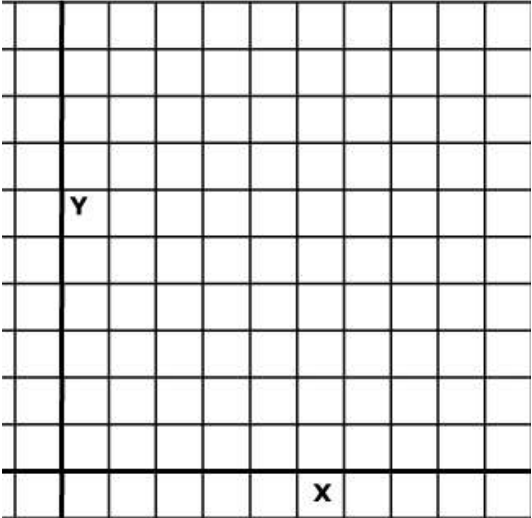
Drag the two points and change the direction of the line until you can answer questions A-D.

A) If a line has a **negative slope**, what is its general direction?

B) If a line has a **positive slope**, what is its general direction?

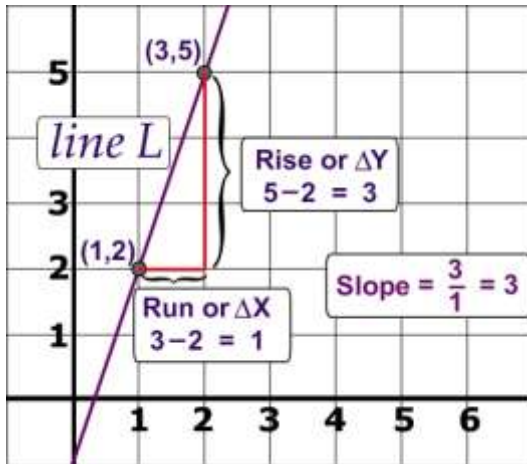
C) Describe the direction of a line with a slope of zero.

D) Describe the direction of a line whose slope is undefined

<p data-bbox="324 961 743 1033">E) Sketch a line with a positive slope</p> 	<p data-bbox="917 961 1336 1033">F) Sketch a line with a negative slope</p> 
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# The Slope Formula

$$\text{Slope} = \frac{Y_2 - Y_1}{X_2 - X_1} = \frac{\text{Rise}}{\text{Run}} = \frac{\Delta Y}{\Delta X}$$



Answers to Part II and Part III at <http://www.mathwarehouse.com/slope2>

## Part II.

What is the slope of a line passing through (4, 3) and (3,1) ?

Find the slope of line P.

1) What is the rise (or  $\Delta Y$ ) ?

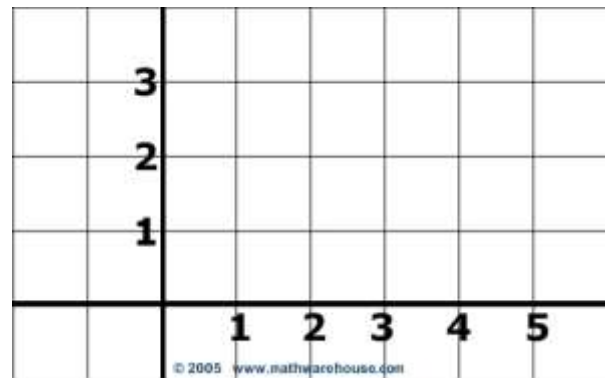
\_\_\_\_\_

2) What is the run (or  $\Delta X$ ) ?

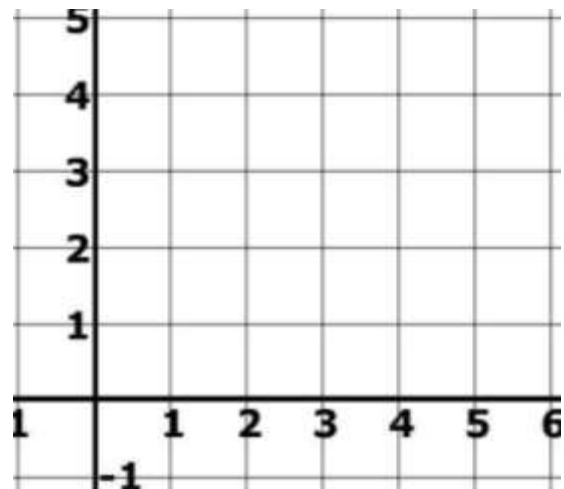
\_\_\_\_\_

3) What is the slope?

\_\_\_\_\_



4) Find the slope of a line passing through the points (1,1) and (4, 2) (Use the graph on the right)



**Part III.**

**Directions:** Use the slope formula (without graphing) to find the slope of a line passing through the points below. Answers at <http://www.mathwarehouse.com/slope5>

5) (10,3) and (7 , 9)

6) (4, -2) and ( 4, 3)

7) (2,10) and (8 , 7)

8) (7, 3) and (8, 5 )

9) (12,11) and (9 , 5)

10) (4, 2) and (4, 5)

**Think –Pair-Share**

Maria, Jose, Michael and Jeffrey are working together. They need to find the slope of the line passing through (7, 3) and (5, 9). Each person wants to solve the problem differently.

Here’s how Jose wants to solve the problem  $\frac{9-3}{5-7}$

Here’s, what Michael wants to do  $\frac{3-9}{7-5}$

Here’s what Jeffrey wants to do  $\frac{3-9}{5-7}$

Here’s how Maria wants to solve the problem  $\frac{9-3}{7-5}$

Who is correct? Explain

**Explanation**

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## Homework

**Direction:** *What is the slope of a line passing through the points below*

1)  $(2, 4)$  and  $(4, 9)$

2)  $(13, 6)$  and  $(3, 1)$

3)  $(12, 2)$  and  $(12, 16)$

4)  $(3, 2)$  and  $(12, 2)$

### *Online Homework*

Visit both of the URLs below (you may want to turn off your computer's volume. ) Both of these pages incorrectly calculate the slope. Explain what is wrong on each page

5) <http://www.mathwarehouse.com/slope3>

Explain the error with this page's use of slope formula

6) <http://www.mathwarehouse.com/slope4>

Explain the error with this page's use of slope formula

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## Slope Resources

- 1) [Slope of a Line](http://www.mathwarehouse.com/algebra/linear_equation/slope-of-a-line.php) : [http://www.mathwarehouse.com/algebra/linear\\_equation/slope-of-a-line.php](http://www.mathwarehouse.com/algebra/linear_equation/slope-of-a-line.php)
- 2) [Interactive Slope](http://www.mathwarehouse.com/algebra/linear_equation/slope-of-a-line.php): [http://www.mathwarehouse.com/algebra/linear\\_equation/slope-of-a-line.php](http://www.mathwarehouse.com/algebra/linear_equation/slope-of-a-line.php)
- 3) [Slope Intercept Form](http://www.mathwarehouse.com/algebra/linear_equation/slope-intercept-form.php) of a line:  
[http://www.mathwarehouse.com/algebra/linear\\_equation/slope-intercept-form.php](http://www.mathwarehouse.com/algebra/linear_equation/slope-intercept-form.php)
- 4) Common Slope Errors (interactive online activities)
  - a. [http://www.mathwarehouse.com/algebra/linear\\_equation/slope/slope\\_dilemma8.html](http://www.mathwarehouse.com/algebra/linear_equation/slope/slope_dilemma8.html)
  - b. [http://www.mathwarehouse.com/algebra/linear\\_equation/slope/2nd-slope\\_dilemma8.htm](http://www.mathwarehouse.com/algebra/linear_equation/slope/2nd-slope_dilemma8.htm)