Slope

10/2

Different Names for Slope:

- Constant Rate of Change

* Average Rate of Change - used in tables

- letter for Slope is m

Oct 3-7:53 AM

Find Slope from:

1. Graph
2. table - A list of ordered pairs
3. 2-points - Formula: $m = \frac{y_2 - y_1}{x_2 - x_1}$

Oct 5-8:29 AM

How to Find Slope:

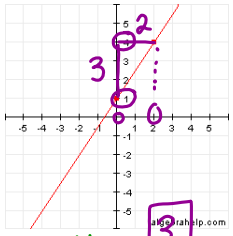
- From a Graph

(x, y)

Rise ↕ (y-axis)

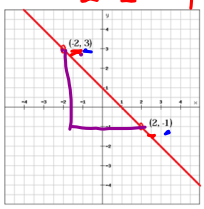
Run ↔ (x-axis)

a)



Positive $\frac{3}{2}$

b)

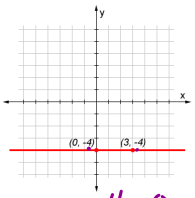


3+1=4

-2-2=-4

Negative -1

c)

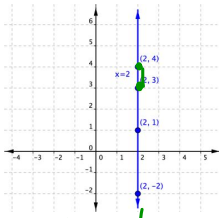


-4+4=0

0-3=-3

Zero slope

d)



4-3=1

2-2=0

undefined

NO slope

Oct 3-7:59 AM

From a table

$\frac{\Delta y}{\Delta x} = \frac{\text{Change in } y}{\text{Change in } x}$

X	Y
-1	0
1	3
3	6
5	9

+2, +3

m = 3/2

x	Y
2	1
4	2
6	3
10	5

+2, +1

+6, +3

m = 3/6 = 1/2

m = 1/2

Oct 3-8:05 AM

★ From 2-points

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

ordered Pairs (x, y)

① $(2,3)\ (-1,6)$
$x_1\ y_1\ \ x_2\ y_2$

$$\frac{6-3}{-1-2} = \frac{3}{-3} = -1$$

② $(-1,0)\ (3,6)$
$x\ y\ \ x\ y$

$6-0 = 6$ $\quad 3-1 = 4$

$$\frac{6 \div 2}{4 \div 2} = \frac{3}{2}$$

Oct 3-8:11 AM

③ $(4,4)\ (2,4)$
$x_1\ y_1\ \ x_2\ y_2$

$$\frac{4-4}{2-4} = \frac{0}{-2}$$

Zero Slope ←→

[y's stay the Same]

④ $(4,4)\ (4,2)$
$x_1\ y_1\ \ x_2\ y_2$

$$\frac{2-4}{4-4} = \frac{-2}{0}$$

No Slope ↕
undefined

[x's Stay the same]

Oct 3-8:16 AM

Find the average rate of change between 2 and 7.

x	y
1	-2
2	-1
4	1
5	2
7	4
8	5

+5

+5

$m = \frac{5}{5} = 1$

Oct 3-8:19 AM