What's Going On?

Checking In

Minds on Which ramp is steeper?

Action! Slope!

Consolidation Fill in the blanks and iPad Game

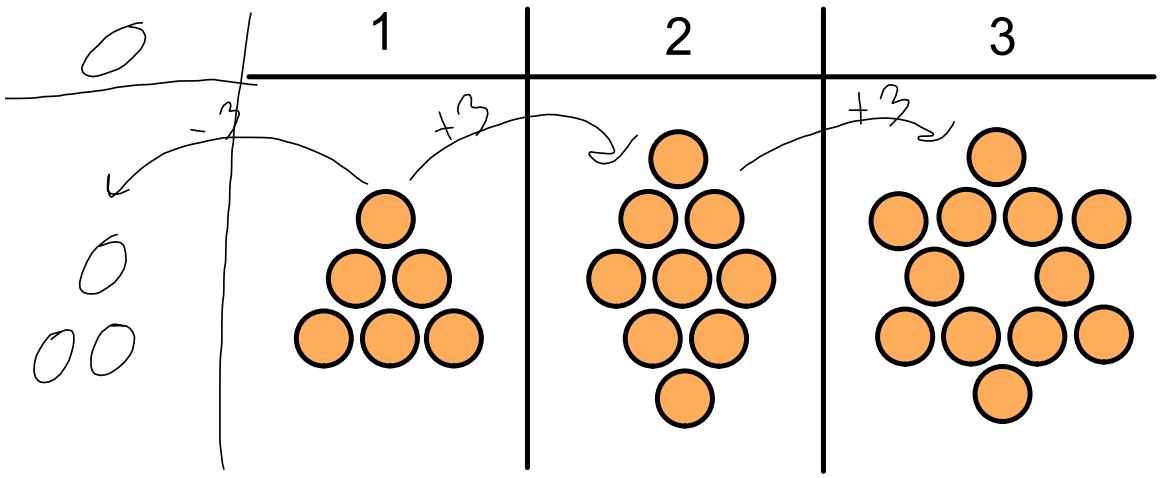
Learning Goal - I will be able to calculate the slope of a line!

L.G.L.

Complete in LGL from last time!

a) Determine if the situation modeled below is Direct or Partial variation.

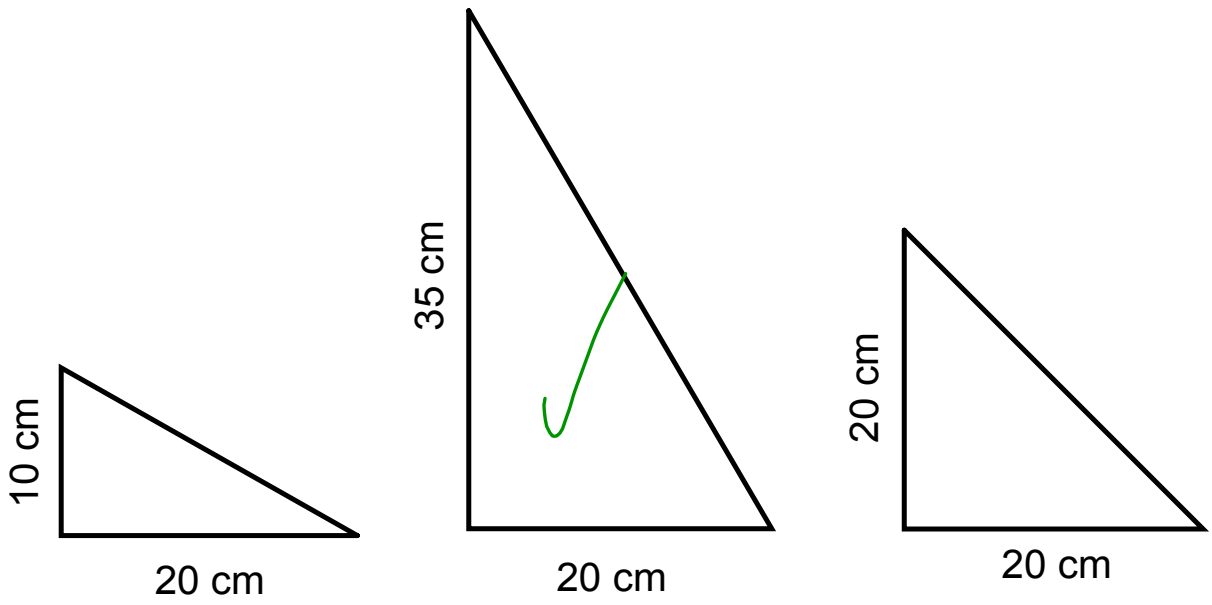
b) Create an equation to model the situation.



$y = 3x + 3$

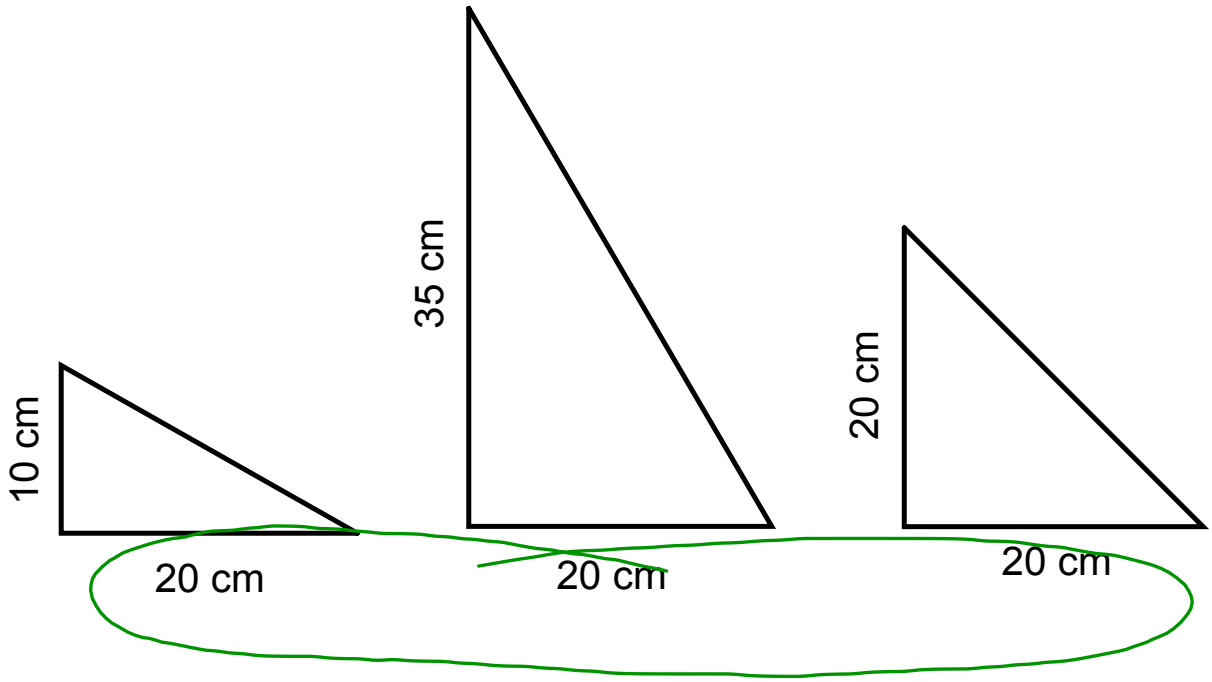
Minds on

Which ramp is steepest?



Minds on

Which ramp is steepest?



How Do You Know?

bases are all identical

Minds on

Which ramp is steepest?

a) A ramp that is 1 metre long and 2 metres high.

2 4

slope = 2

b) A ramp that is 2 metres long and 6 metres high.

slope = 3

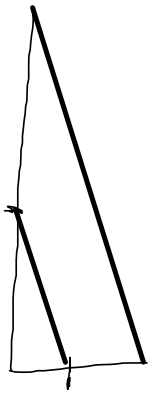
c) A ramp that is 2 metres long and 8 metres high.

slope = 4

d) A ramp that is 4 metres long and 12 metres high.

2 6

slope = 3



Minds on

Which ramp is steepest?

a) A ramp that is 1 metre long and 2 metres high.

b) A ramp that is 3 metres long and 6 metres high.

c) A ramp that is 4.75 metres long and 9.5 metres high.

They're all the same!!!!!

How Do You Know?

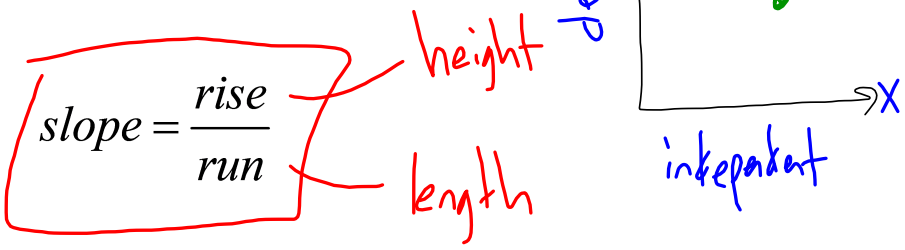
If you divide the height by the length you get 2 for every single one!

Action!

Slope

Slope is a measure of the steepness of a line.

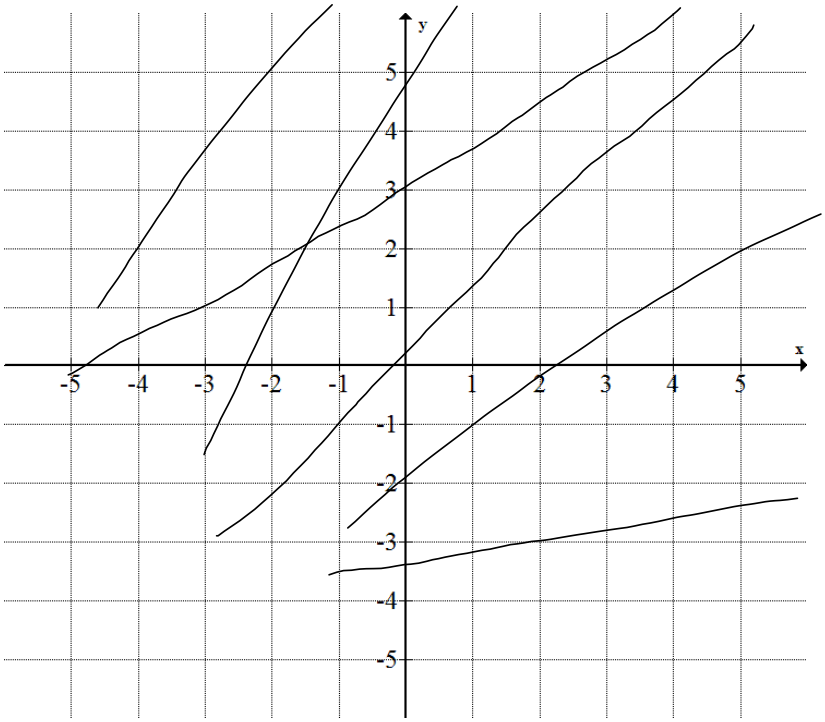
It is measured as $slope = \frac{rise}{run}$



Where the rise is the vertical distance between two points and the run is the horizontal distance between two points.

Action!

Positive Slope



Action!

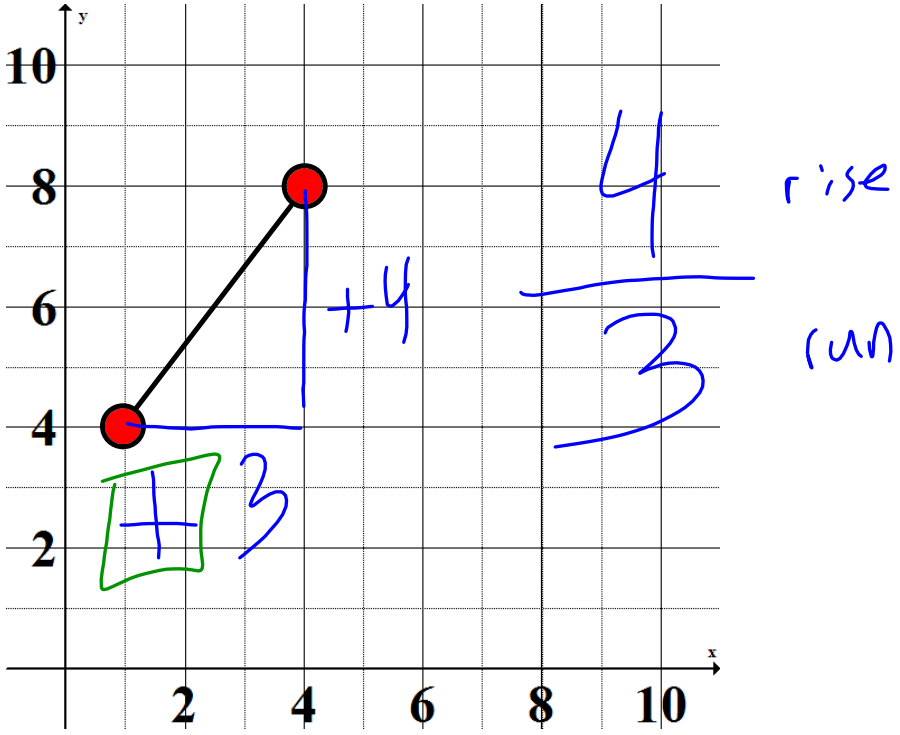
Hang Man!

Lines with positive slope rise

from left to right.

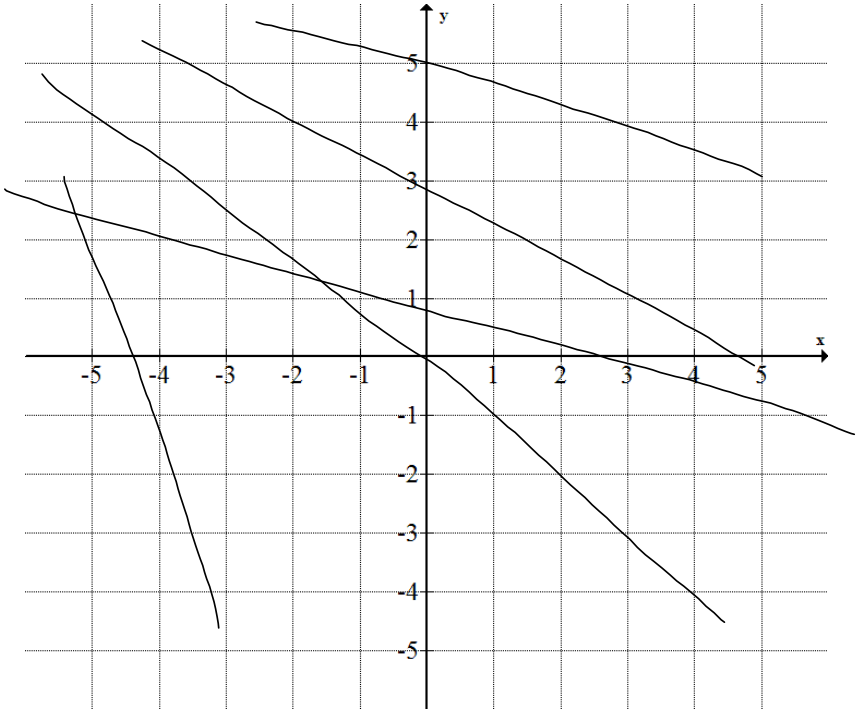
Action!

What's the Slope?



Action!

Negative Slope



Action!

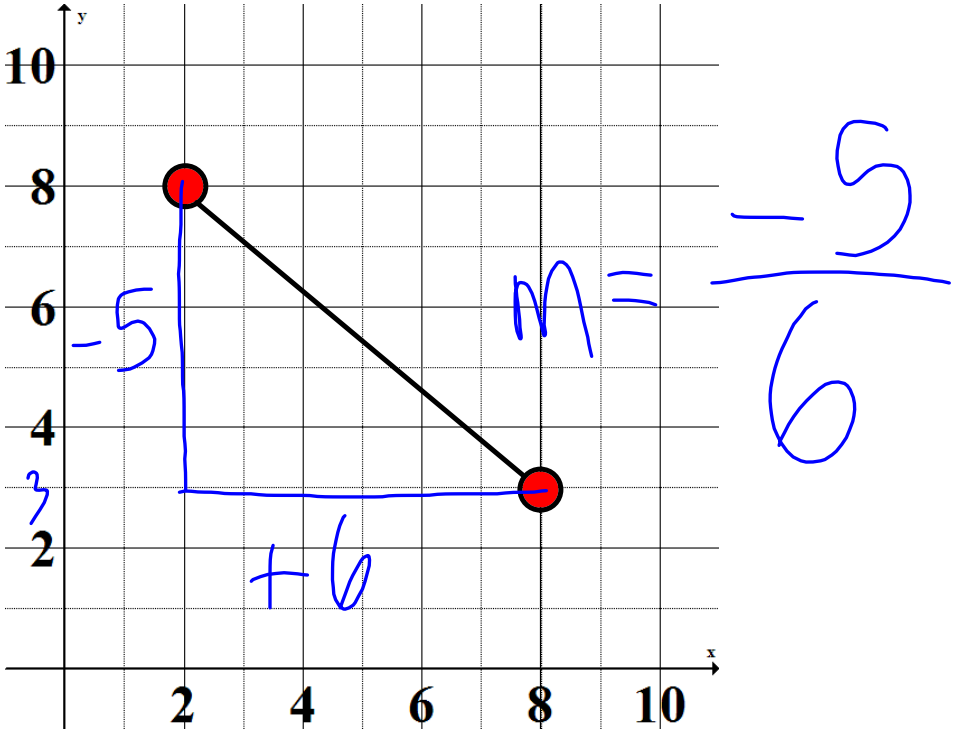
Hang Man!

Lines with negative slope _f a l l_

from _l e f t_ to _r i g h t_.

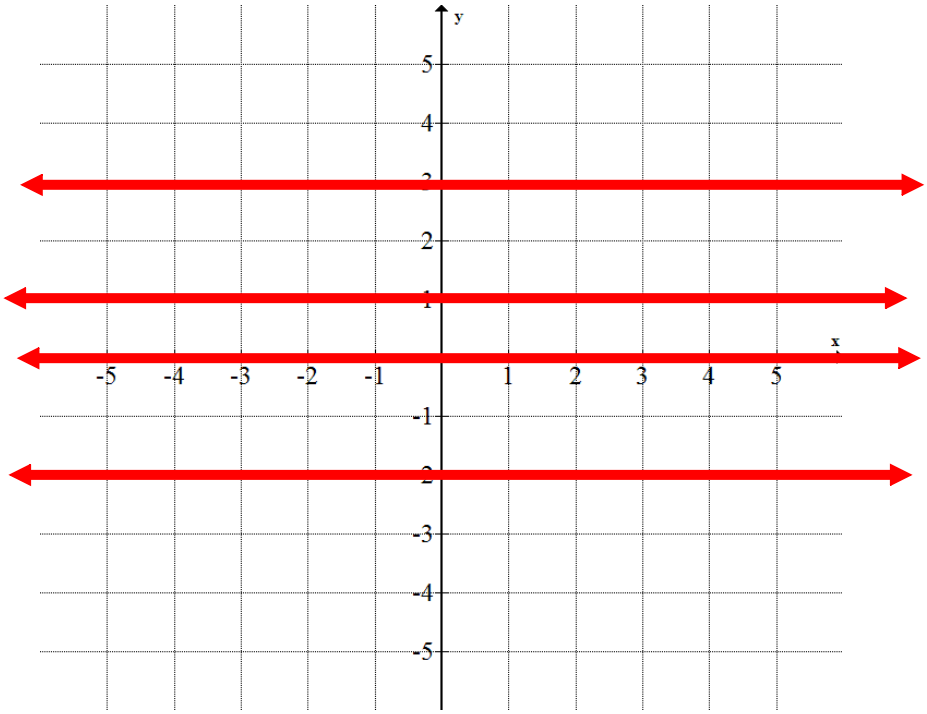
Action!

What's the Slope?



Action!

Horizontal Lines



Action!

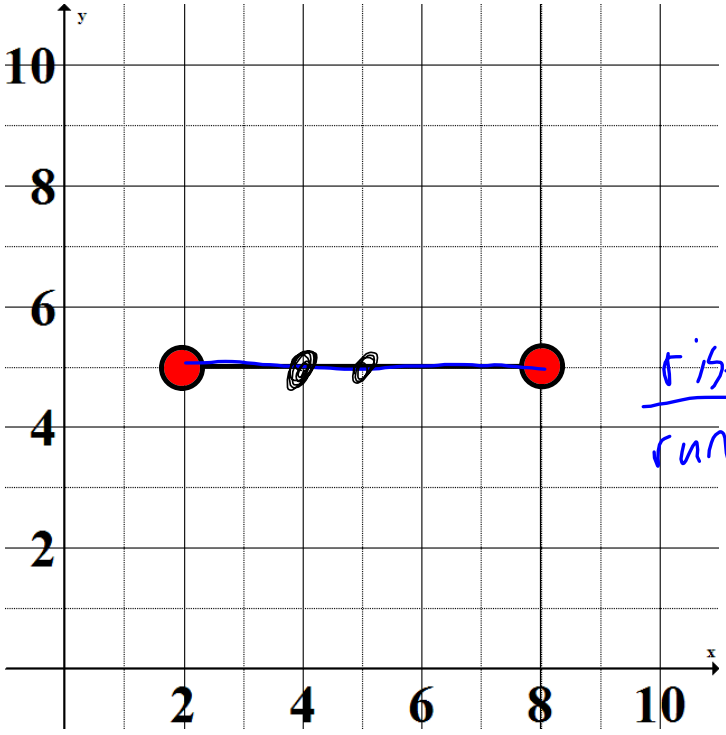
Hangman!

All horizontal lines have a slope of

Zero

Action!

What's the Slope?



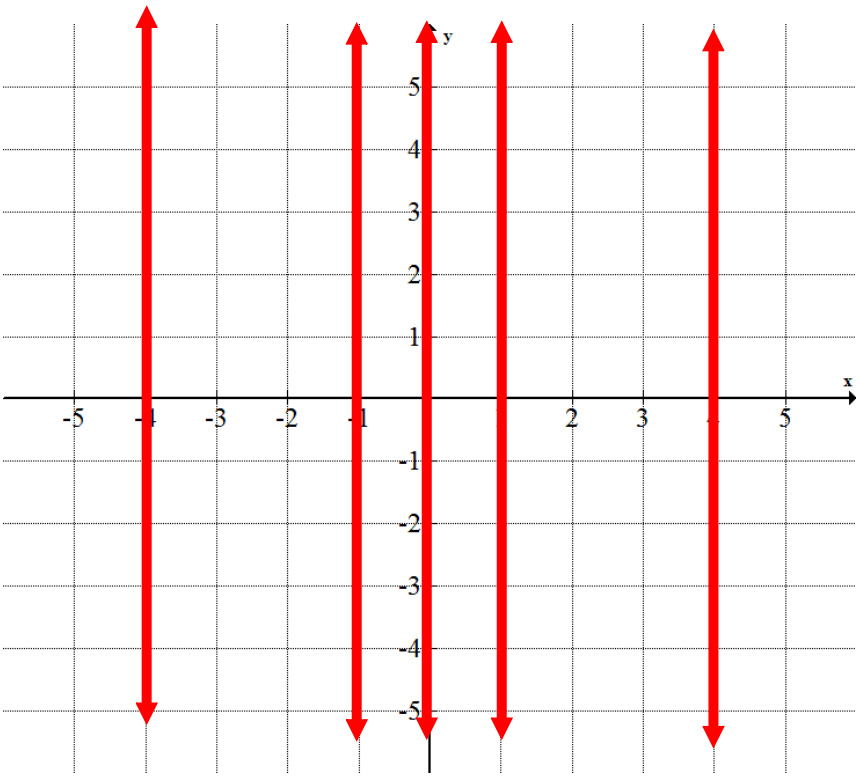
$\frac{\text{rise}}{\text{run}} = \frac{0}{6}$

$= 0$

Action!

Vertical Lines

use your calculator...



Action!

Hangman

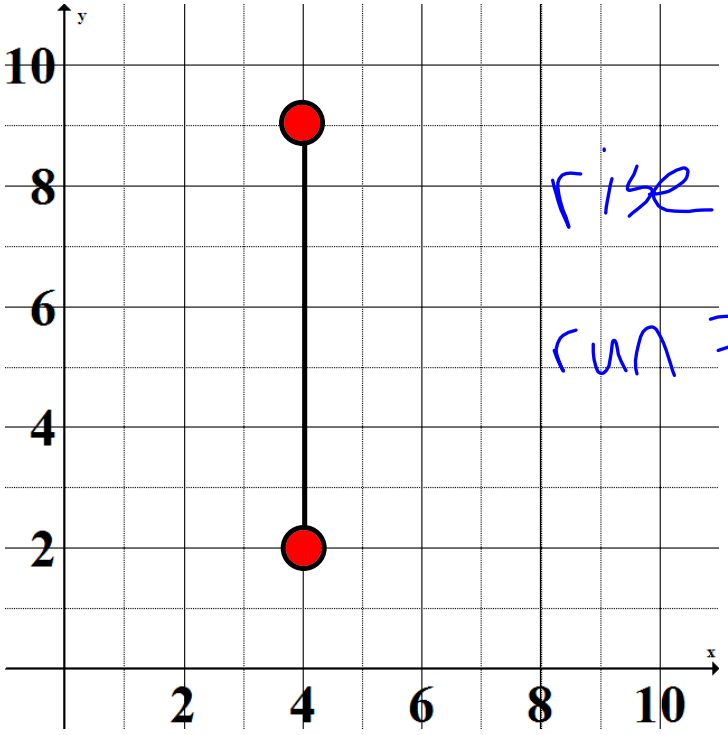
h b g k s c o a t r s l m

The slope of all vertical lines is

u n d e f i n e d !

Action!

What's the Slope?



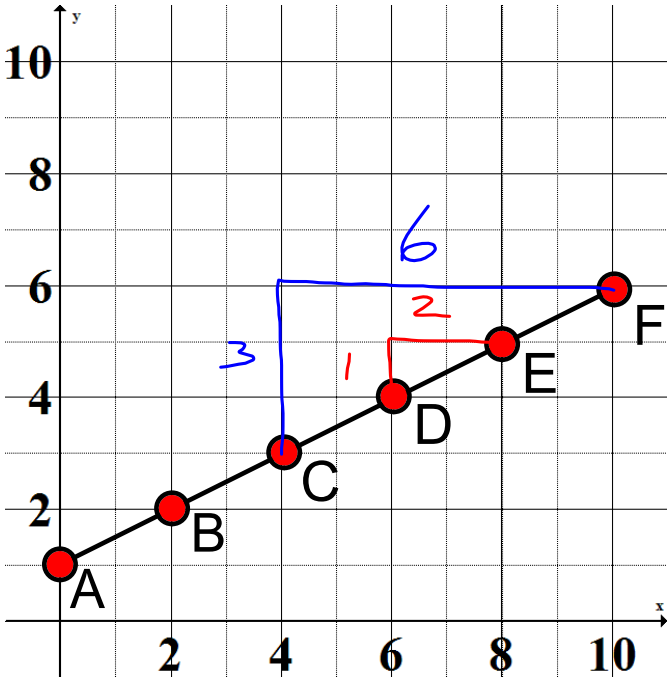
rise = 7

run = 0

$m = \frac{7}{0}$

Action!

What's the Slope?



AB = $\frac{1}{2}$

AC = $\frac{2}{4}$ = $\frac{1}{2}$

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

AE = $\frac{4}{8}$ = $\frac{1}{2}$

AF = $\frac{5}{10}$ = $\frac{1}{2}$

~~BD~~

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

DE = $\frac{1}{2}$

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

BF = $\frac{4}{8}$ = $\frac{1}{2}$

Action!

Fill in the Blanks

NOTE

The slope is a measure of the Steepness of a line segment

The slope of a line segment is calculated as the $\frac{rise}{run}$ divided by

between any two points.

Action!

Fill in the Blanks

A line segment _____ from left to right has a

_____ slope.

A line segment _____ from left to right has a

_____ slope.

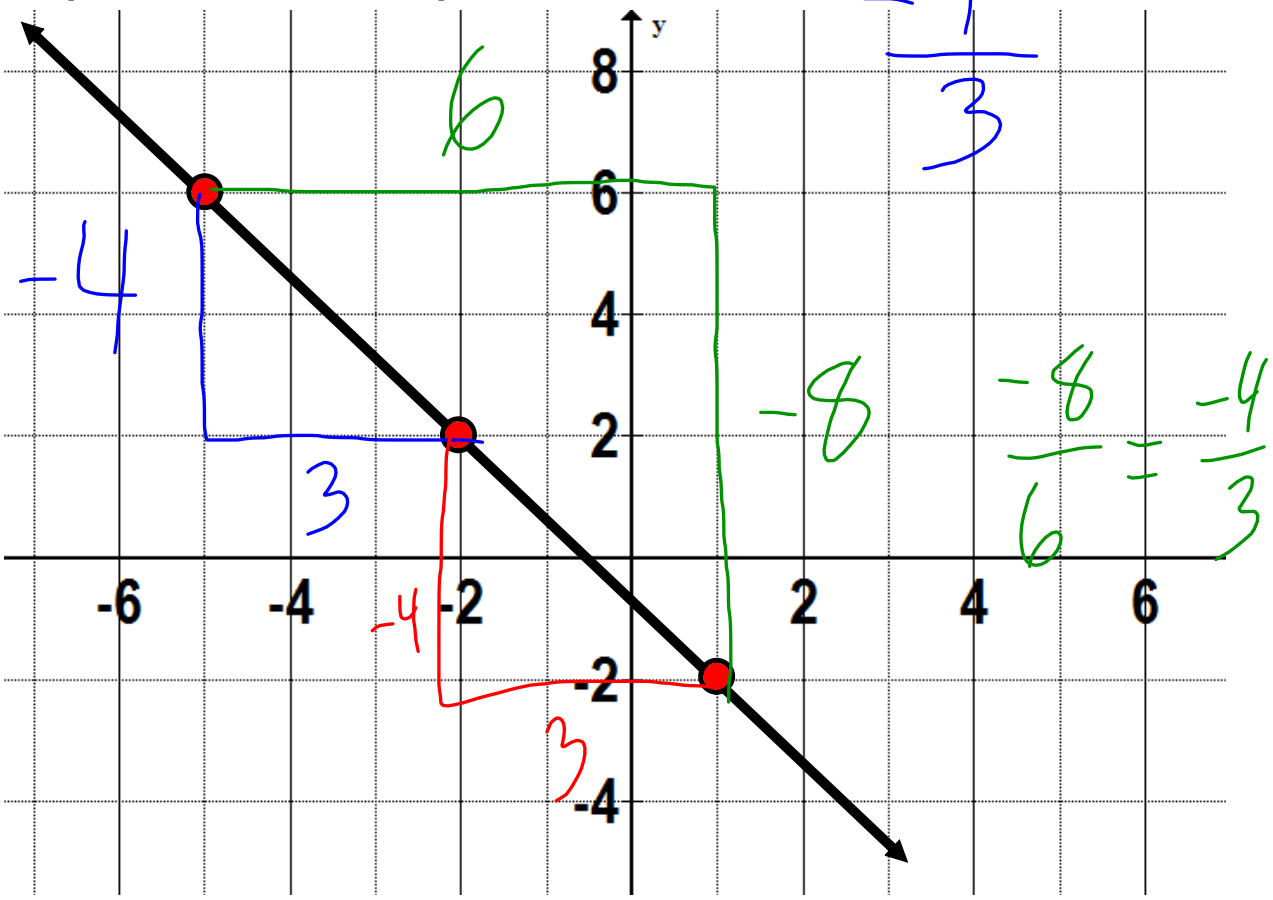
Horizontal lines have a slope of _____.

The slope of a vertical line is _____.

Consolidation

Problem Solving with Slope

Slope from a Graph



Consolidation

Problem Solving with Slope

Slope from a Table of Values

$\frac{-8}{6} = \frac{-4}{3}$

x	y
-5	19
-2	15
1	11
4	7

run: +6, +3 rise: −8, −4

$\frac{-4}{3}$

7 − 11 = −4

Slope is ALWAYS rise OVER run

The y's rise

Consolidation

Problem Solving with Slope

Slope from Two Points

1 2

(-4, 9) and (2, -7)

x_1 y_1 x_2 y_2

$\frac{-16}{6}$

x	y
-4	9
2	-7

6 -16

$\frac{-7-9}{2--4}$ RISE / RUN

$= \frac{-16}{6}$

Consolidation

Problem Solving with Slope

Point from Slope and a Point

A line with slope 2/3 goes through the point (2, -1). Determine the coordinates of three other points on the line. Be sure that you find at least point on either side of (2, -1).