THE CARTESIAN PLANE

Feb 29/16

*A point is given as (x,y) (2,4)

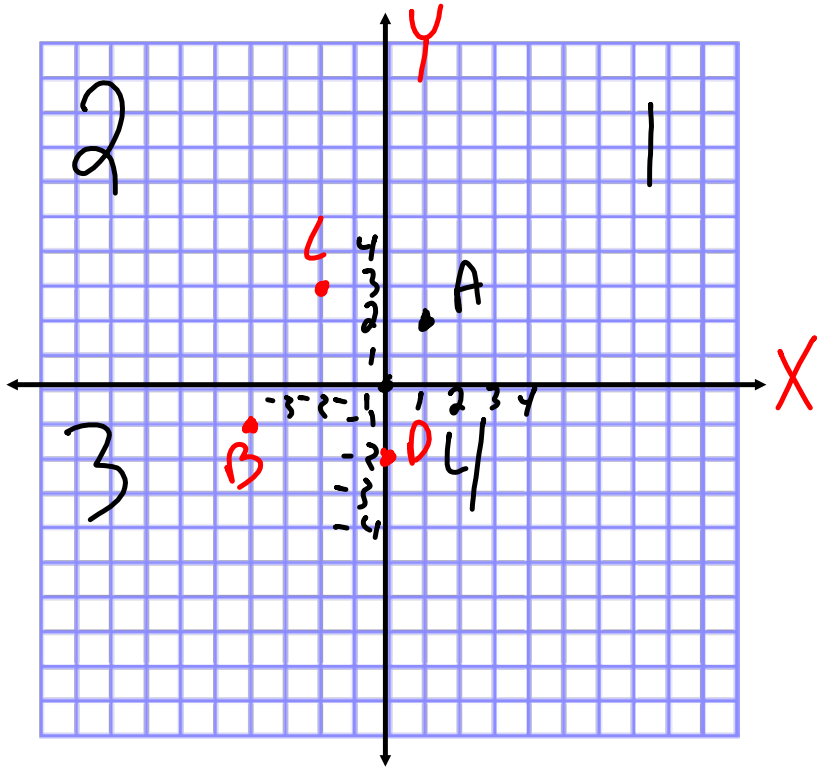
*x is first, on horizontal axis

* y is second, on vertical axis

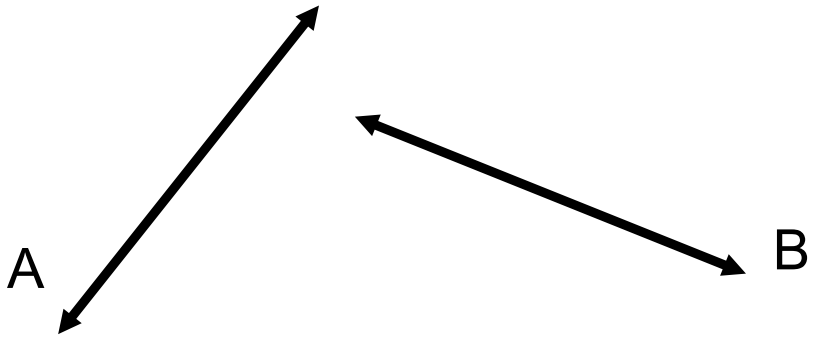
Ex.1. Label the coordinates.

A (1, 2) B (-4, -1) C (-2, 3) D (0, -2)

X, y



The Slope of a Line



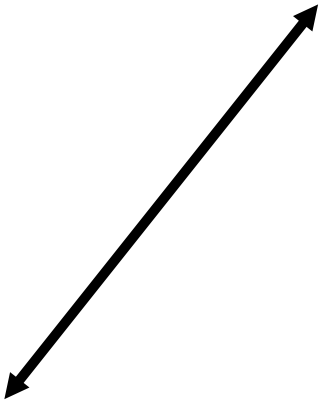
Lines are used to keep track of lots of info -- like how much money a company makes every year or the amount that you still owe your parents after paying them back weekly.

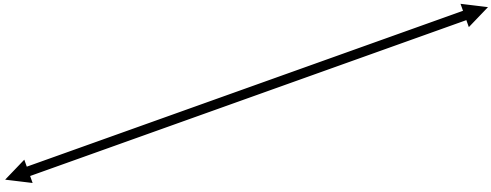
Just off the top of your head, which of the lines above would you want to describe the profits of <u>your</u> company?

Which line would you want showing the amount <u>you</u> still owe your parents?

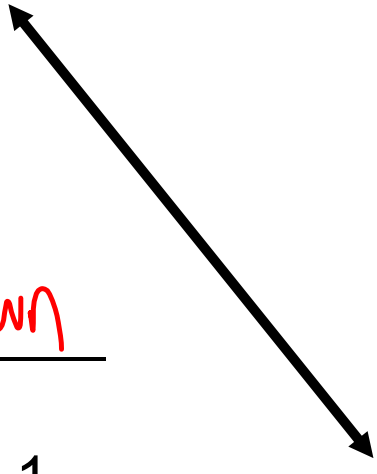
The direction the line tilts tells you important information about the line.

For slopes, we look at the lines from left to right, just like we read.



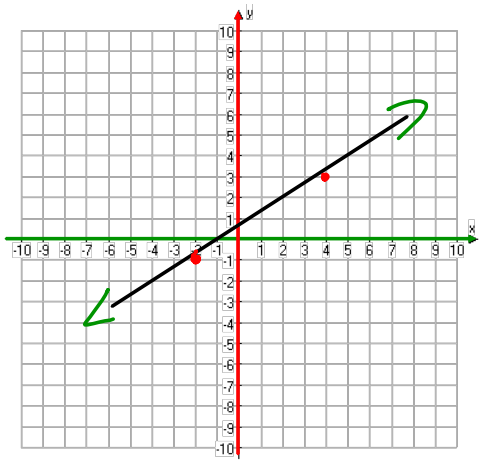


These lines are going up to the right. They have **positive** slopes, like 5 or $\frac{2}{3}$.



These lines are going down to the right. They have **negative** slopes, like -7 or $-\frac{1}{2}$.

Graph the points (-2, -1) and (4, 3) and then draw the line.



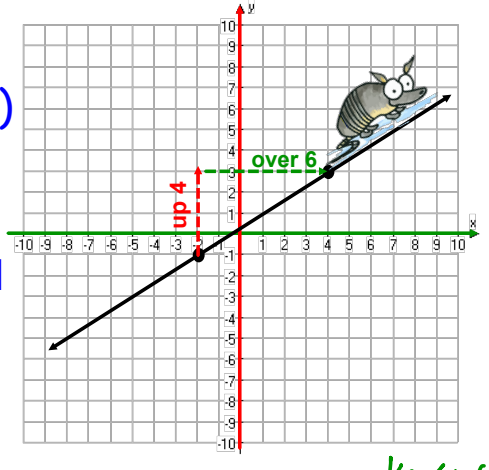
Slope is $\frac{\text{rise}}{\text{run}}$

rise **OVER** **run**

Up or Down to the right!

To get from (-2, -1) to the point (4, 3)

You **RISE up 4** and **RUN over 6**



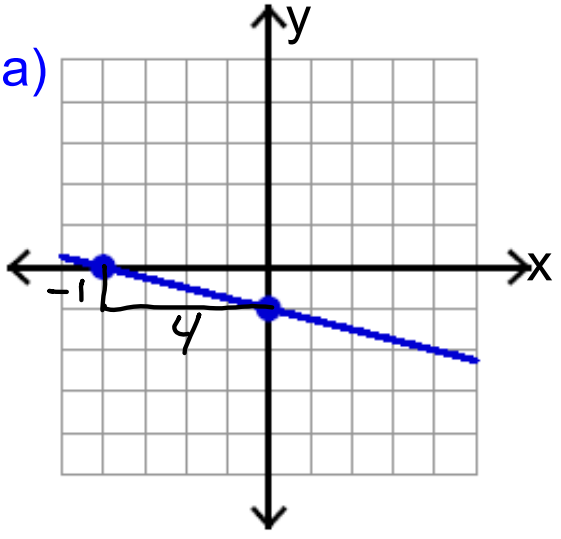
The slope is...

$$\frac{\text{rise}}{\text{run}} = \frac{4 \div 2}{6 \div 2} = \frac{2}{3}$$

*make sure slope is in lowest terms.

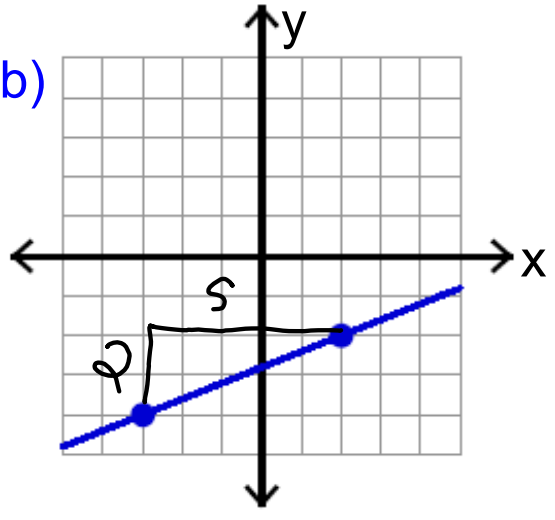
Find the slopes of the lines.

a)



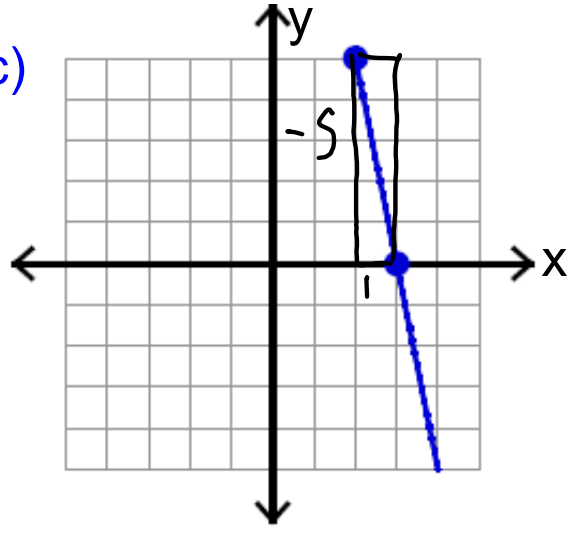
$$\text{Slope} = \frac{\text{rise}}{\text{run}} = \frac{-1}{4}$$

b)



$$\text{Slope} = \frac{\text{rise}}{\text{run}} = \frac{2}{5}$$

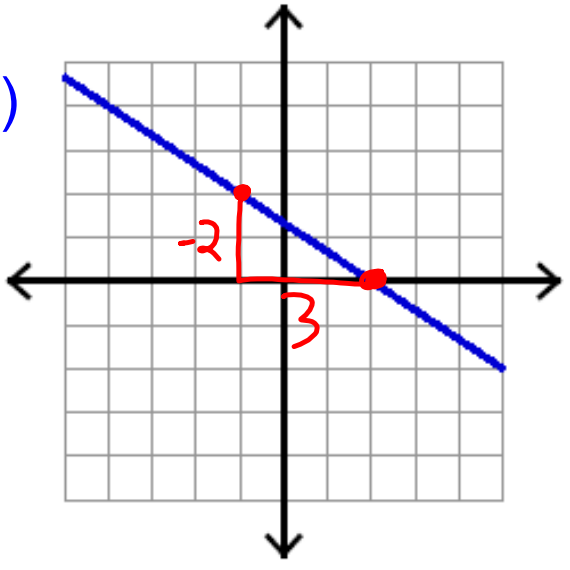
c)



$$\text{Slope} = \frac{-5}{1}$$

$$\frac{\text{rise}}{\text{run}} = -5$$

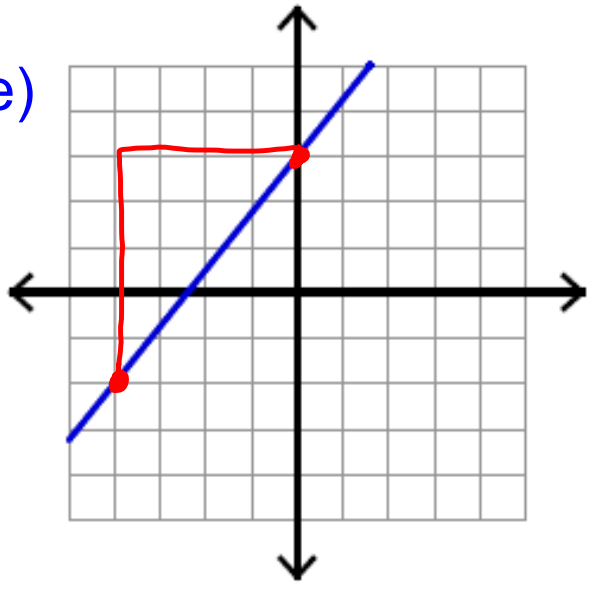
d)



$\text{Slope} = \frac{-2}{3}$

*when no points are given, choose two points

e)



$\text{Slope} = \frac{\text{rise}}{\text{run}}$

$= \frac{5}{4}$

Homework:

Finding the Slope of Lines Handout

Don't do #8 and 14

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February 29, 2016