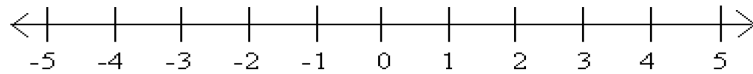


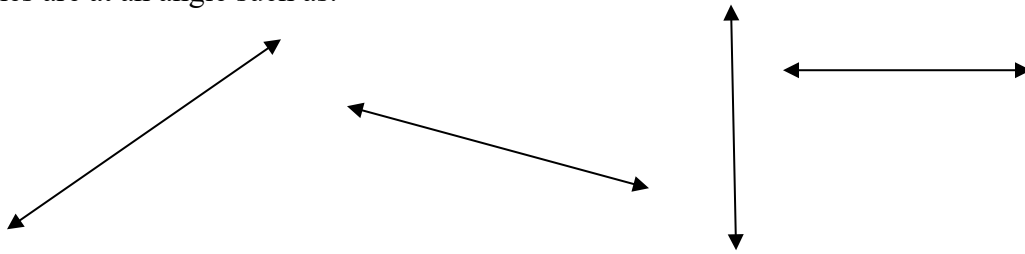
Chapter 2

SLOPE

Not all lines are straight across like a number line.



Some lines are at an angle such as:



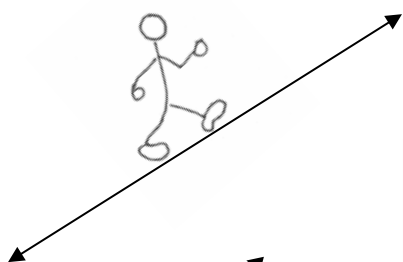
The first to determining slope is to determine which angle direction the line goes.

We read from **Left** → **Right**

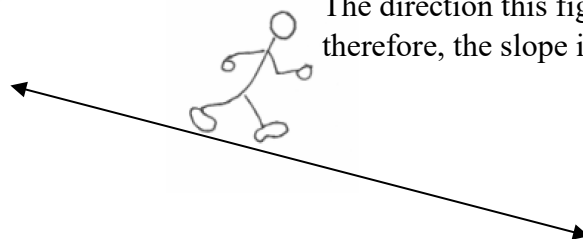


... think of the number line as if you are walking from left to right.

Look at the following examples:

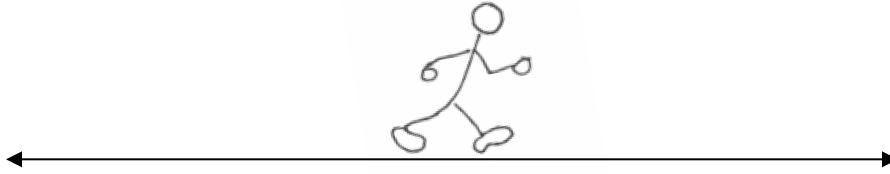


Because the stick figure is walking upward – the slope is **positive!**



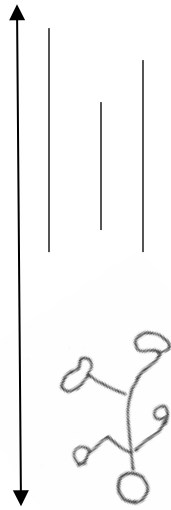
The direction this figure is walking is downward – therefore, the slope is **negative!**

Well, what about straight across?



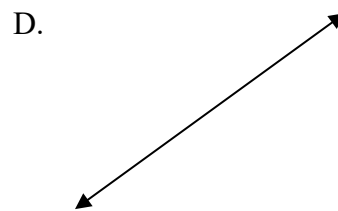
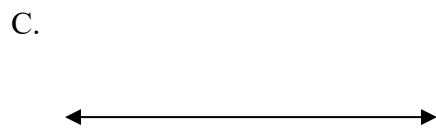
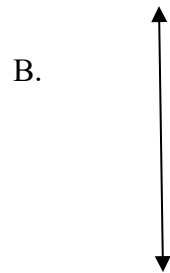
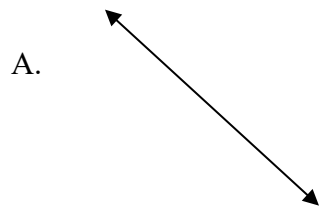
The line is straight across – **zero slope!**

The last slope is:



As you can see, it is impossible to walk on (unless you are a superhero), and this slope is called – **undefined** or **no slope**.

Determine if the following slopes are: positive, negative, zero slope, or undefined.



Remember we always look at the line from Left → Right.

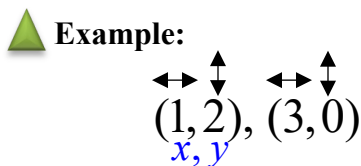
Plotting Points on a Coordinate Plane

Now look at lines on a cartesian plane. (*Cartesian plane is a formal name for a coordinate plane or graph.*)

Plot the points $(1,2)$, $(3,0)$, then determine the angle of the slope.

Remember to start with the x -value and move right or left from the center 0 .

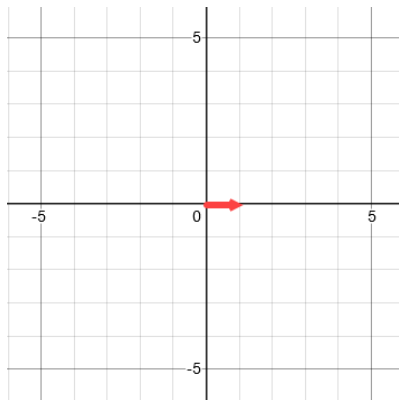
Then look at the y -value and move up or down on whether the number is positive or negative.



The arrows above the points show the direction you will move in the coordinate plane.

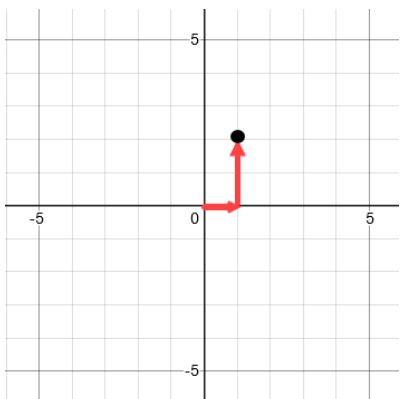
x values move left or right while y values move up and down.

The first set of points is $(1,2)$.



The point is: $(1,2)$.

The value for x is $+1$, move 1 place from the center of the graph to the right from the center at $(0,0)$.



The point is: $(1,2)$. 2 is the y -value.

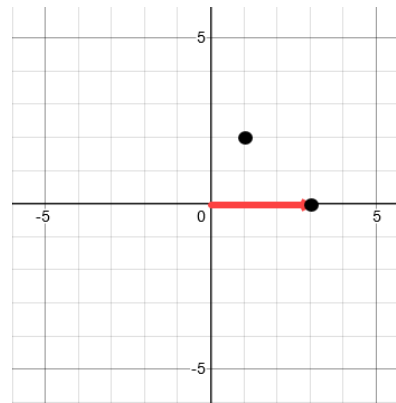
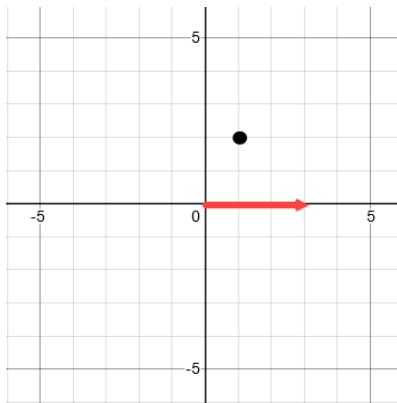
From where you left off for the x value, move 2 places up (which is the y -value).

Then, place the dot to show the location of $(1,2)$.

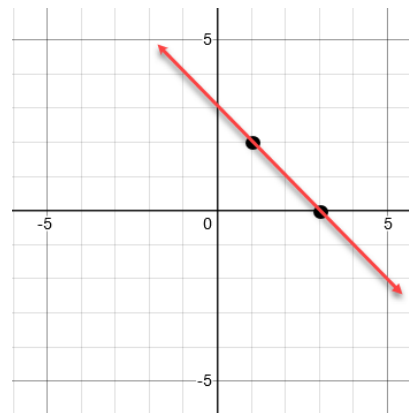
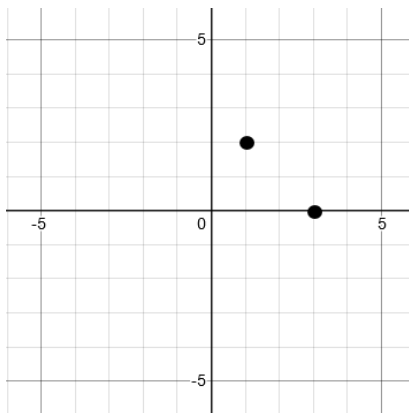
This is the first point $(1, 2)$, next plot the point $(3, 0)$.

Once again, start at the origin $(0, 0)$ and move three places to the right. Since the y -value is zero, place your point where the arrow stops at 3 and place your point.

The original point $(1, 2)$ stays on the graph while plotting the second point.



Now that there are two points on the cartesian plane. Draw a straight line through them.



The next step is to determine if the slope is positive, negative, zero slope, or undefined.

Remember to look at the line from left to right.

Plot the set of points for each of the graphs below and draw a line between the points to determine the angle of the slope.

E. $(3, 1), (-2, 1)$

F. $(2, 2), (5, 4)$

G. $(3, 5), (3, -1)$

H. $(-3, 2), (1, 1)$