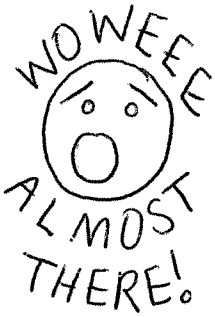
Hey Everyone!

Hope you are doing well!

I am proud of your participation in our work-from-home program. So many of you are sending me messages for help, working your best to continue your learning. Thank you for all of your hard work - your brain will thank you!

Please keep sending me whatever you have completed. Remember, it does not matter if you are handing in "late" work - everything you hand in can only BOOST your mark!




Your FINAL HAND IN DAY is June 19th 2020. This is the last possible day to hand anything in!!!

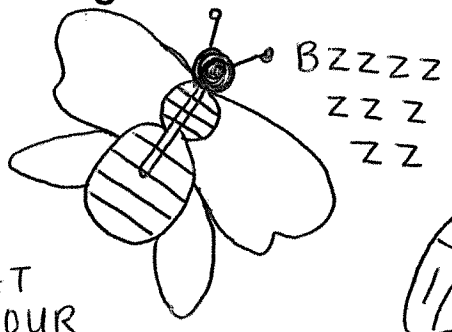
Current YOU (you...right NOW!) is the boss of how future YOU will do in school when we come back in September. Give September YOU the gift of not having too many gaps to fill!

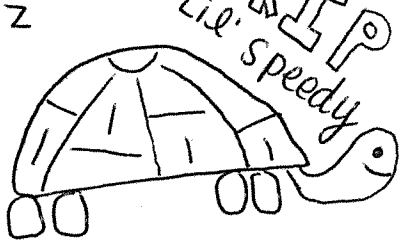

This week there are some *exciting* celebrations...

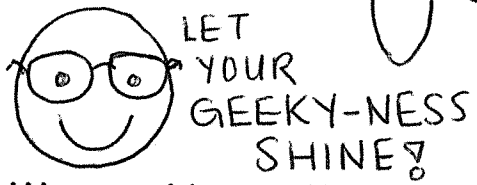
May 20th - World Bee Day!

May 23rd - World Turtle Day!

May 25th - Geek Pride Day!




Missing you tons.

Stay happy and healthy and keep that brain learning!

Ms. Burns

# 9 Math

- ☐ U5 Booklet 3
- ☐ U5A3
- ☐ Hand in ANY finished work to Ms. Burns! (yellow assignments and tests!)

# 9 math

# Unit 5

## Linear Relations

## booklet 3

May 19th - May 26th

Name:_____

*Visit www.burnspvw.weebly.com to help fill this booklet*

# Quick Review

Last week, we were introduced to our new favorite equation:

$$y=mx+b$$

We practiced finding "m" from a table of values:

| x | y |
|---|---|
| -1 | -5 |
| 0 | -3 |
| 1 | -1 |
| 2 | 1 |
| 3 | 3 |

+ 2
+ 2
+ 2
+ 2

$$y=\underline{2}x+b$$

And we practiced finding "b" by:

1) Plugging in any pair of (x,y) values
2) Solving for "b"

| x | y |
|---|---|
| -1 | -5 |
| 0 | -3 |
| 1 | -1 |
| 2 | 1 |
| 3 | 3 |

(x,y)
(2,1)
X=2
Y=1

$$y=2x+b$$

$$(1)=2(2)+b$$

$$1=4+b$$

$$-3=b$$

Once we have "m" and "b", we plug them into the original equation, and leave "x" and "y" as variables!

$$y=2x-3$$

# What is "m"?

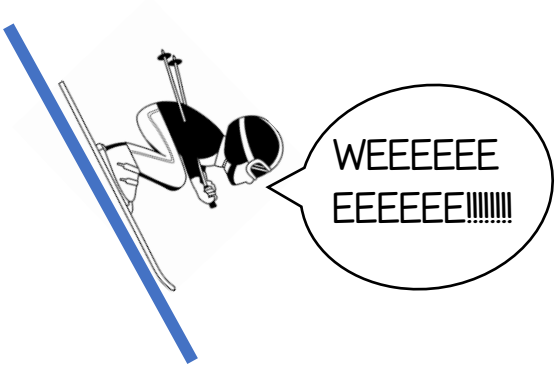
When we look at equations in the form y=mx+b we can find out information immediately about what the linear graph will look like!

## "m" is the SLOPE OF THE LINE

The "slope" of a line is <u>how STEEP it is.</u>

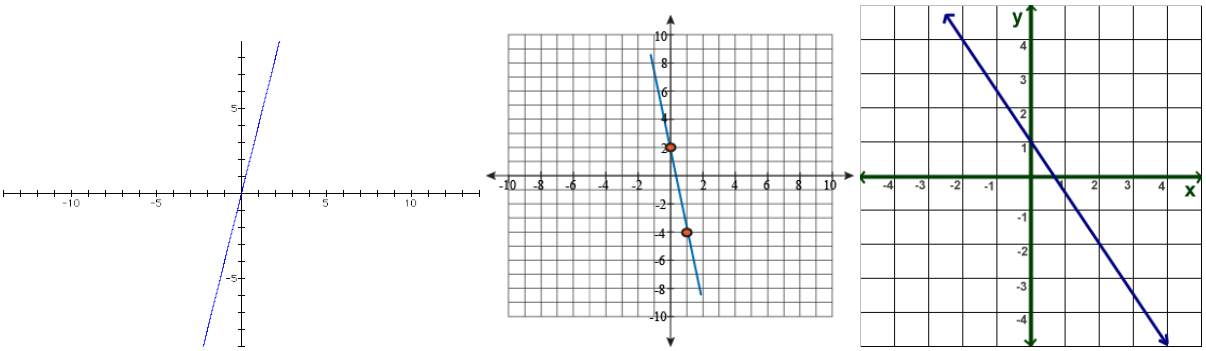
Think of skiing...

If a hill is **very STEEP** it looks like this:




- FUN! / SCARY!
- STEEP INCLINE
- LARGE SLOPE
- BIG "m"

This is what these graphs look like:

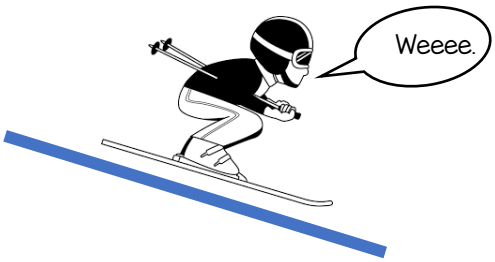



***NOTICE THEY DON'T ALL HAVE TO BE GOING THE SAME DIRECTION!***

Because these linear graphs are STEEP, they have a LARGE slope. This means their "m" numbers will be bigger than ONE.

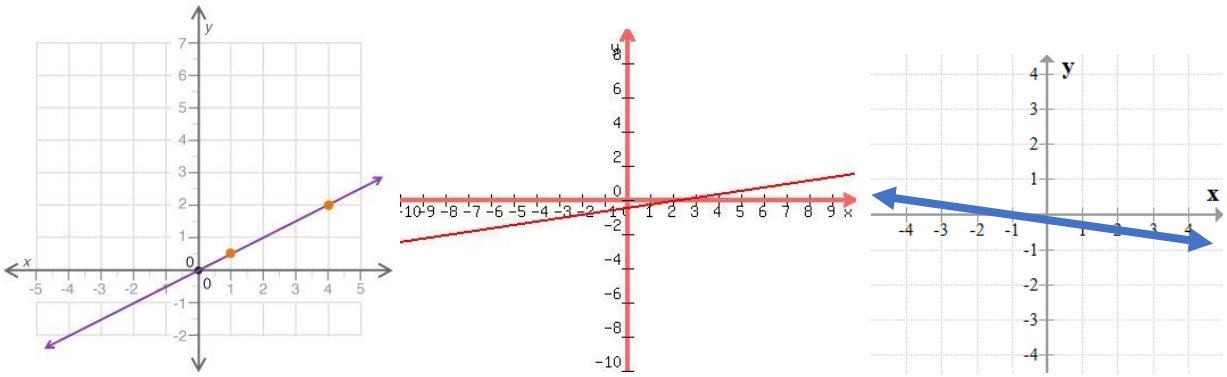
EX: $y=3x+2$ or $y=5x-1$ or $y=11x+4$ or $y=32x-5$

If a hill is NOT steep it looks like this:




- Less fun
- NOT very steep
- SMALL SLOPE
- SMALL "m"

This is what these graphs look like:



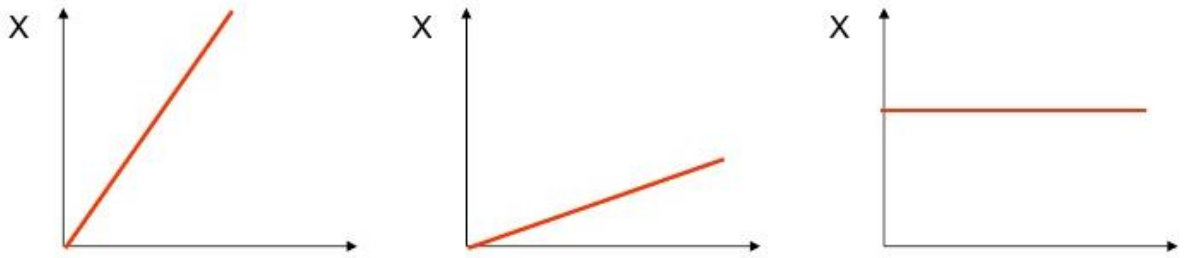
***NOTICE THEY DON'T ALL HAVE TO BE GOING THE SAME DIRECTION!***

Because these linear graphs are NOT steep, they have a SMALL slope, which means their value or "m" will be small.

EX: $y=x+2$ or $y=0.5x-1$ or $y=1.2x+4$ or $y=0.75x-5$

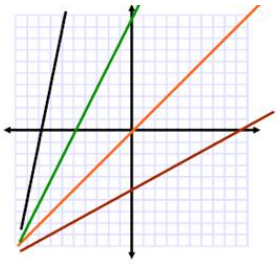
## Practice :

Circle the graph that has the largest "m":

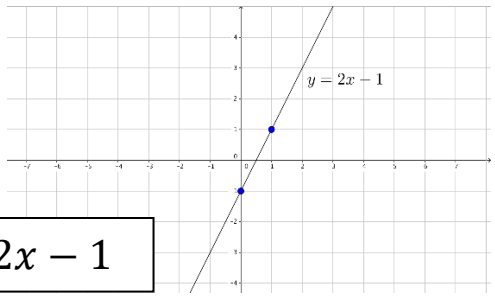


# ✚ or ▭ "m"?

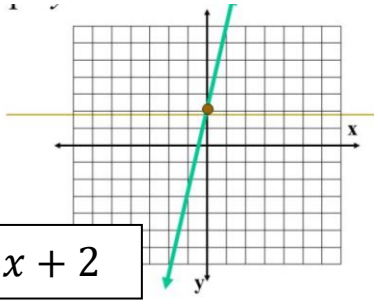
If your slope is POSITIVE, your "m" value will be POSITIVE. These linear graphs are "going up":



EXAMPLES:

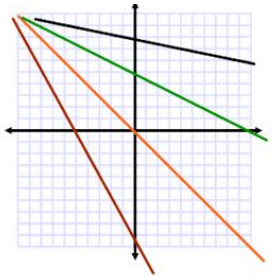



$y = +2x - 1$

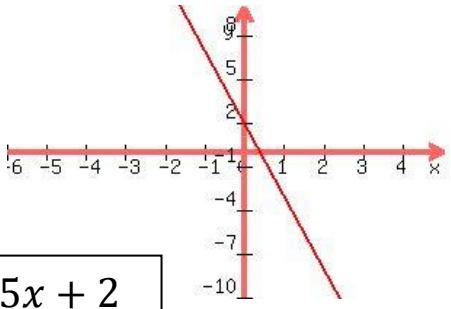



$y = +5x + 2$

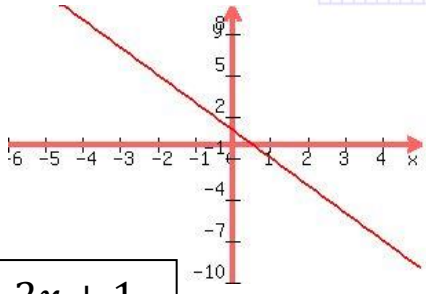
If your slope is NEGATIVE, your "m" value will be NEGATIVE. These linear graphs are "going down":



## EXAMPLES:

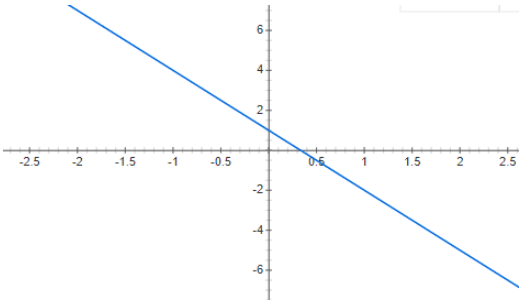


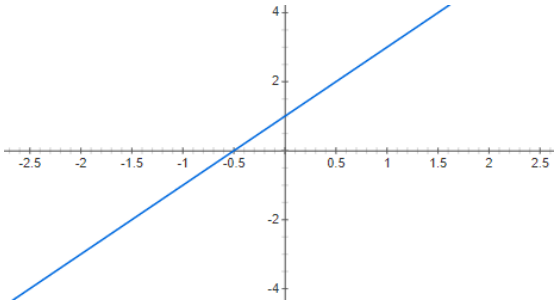

$y = -5x + 2$




$y = -2x + 1$

Which of the following is $y=-3x+1$??????????????????





# Slope Dude

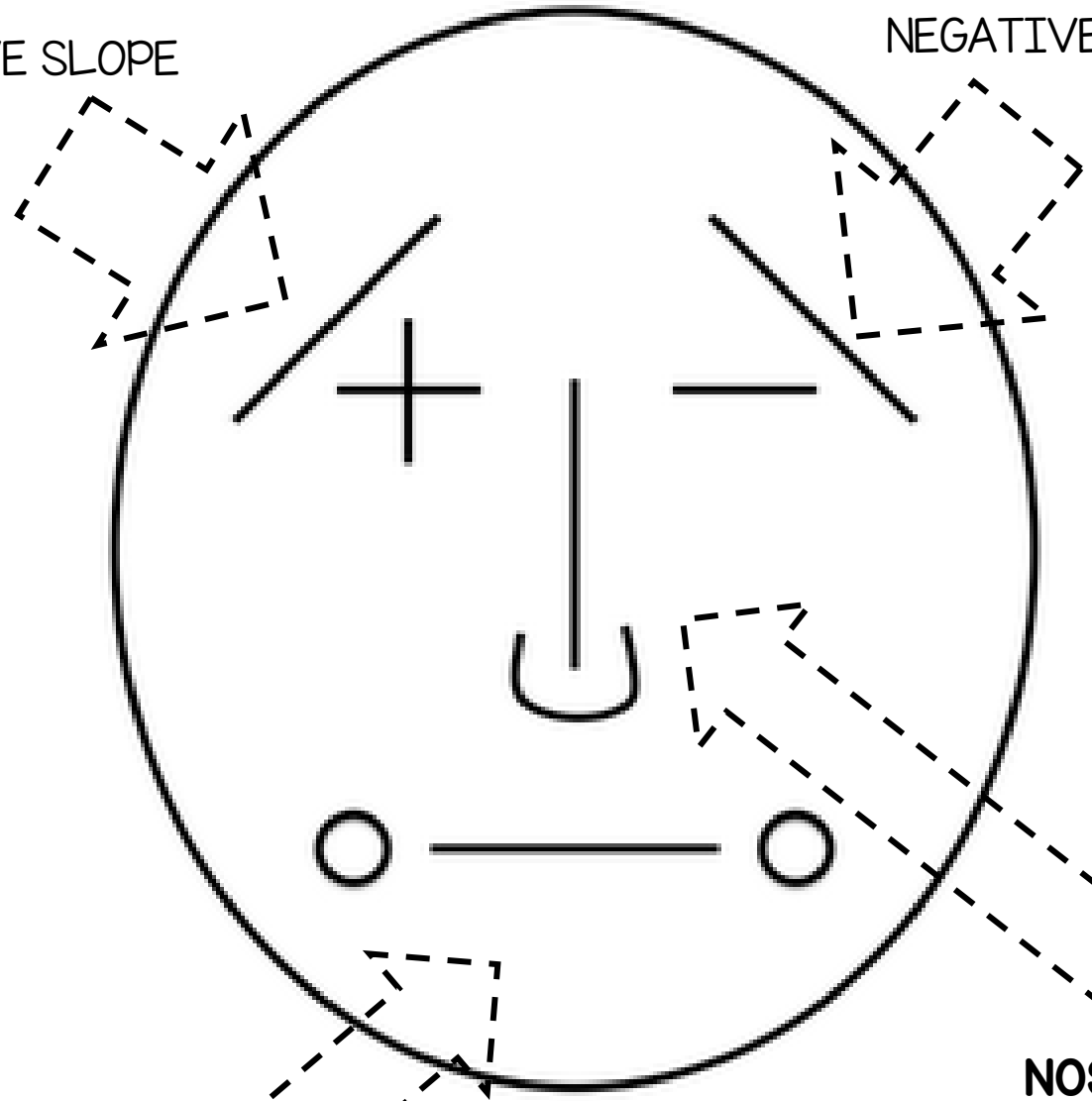
**Say HELLO to Mr.Slope Dude! He is our best friend in this unit, because he helps us remember what linear graph slopes look like!**

**LEFT EYEBROW**

POSITIVE SLOPE

**RIGHT EYEBROW**

NEGATIVE SLOPE



**MOUTH**

"ZERO" SLOPE

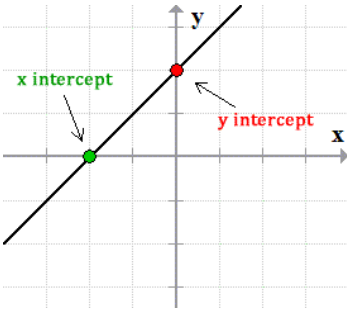
**NOSE**

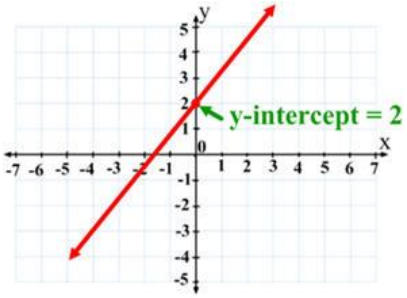
"UNDEFINED" SLOPE

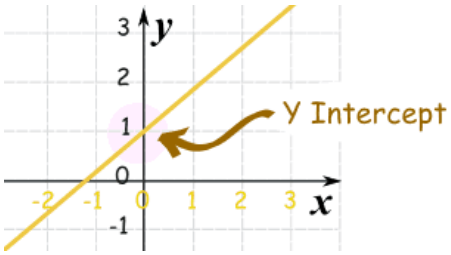
# What is "b"?

"b" is what we call the Y INTERCEPT of a linear graph.

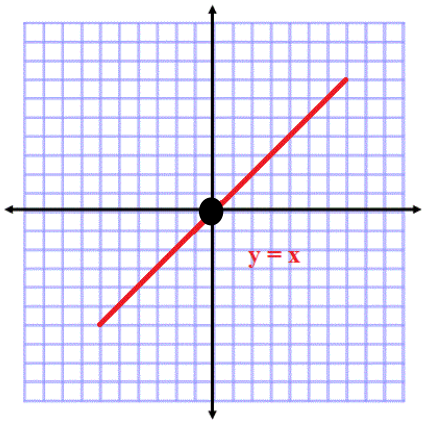
The "Y INTERCEPT" is <u>where the line crosses the y-axis.</u>




If we think of the regular graph y=x …




We can think of y=x in the form y=mx+b as…

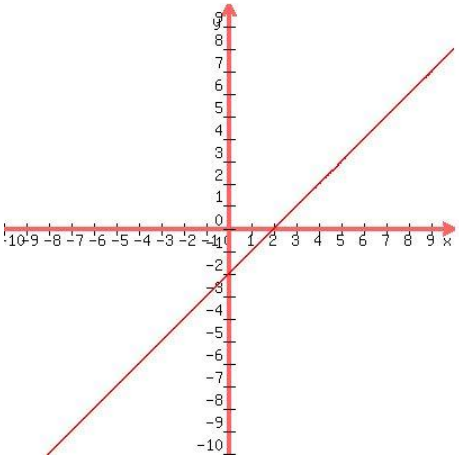
$$y=1x+0$$

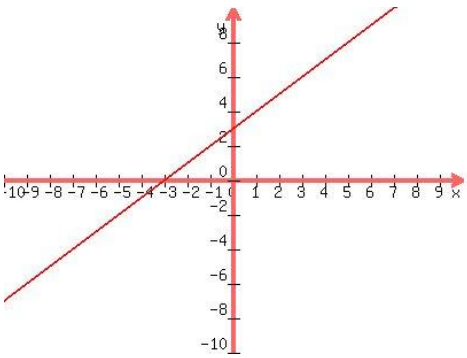
[m=1 and b=0]

It makes sense that b=0 because of the y intercept @ (0,0).

**If we compare all graphs to this original y=x, we notice that our "b" (y-intercept) is**

**HOW MUCH WE MOVE THE GRAPH UP OR DOWN**





Name : _____

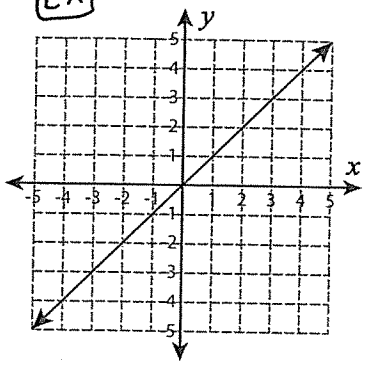
U5A3 ___/67

Sheet 1

# Types of Slopes

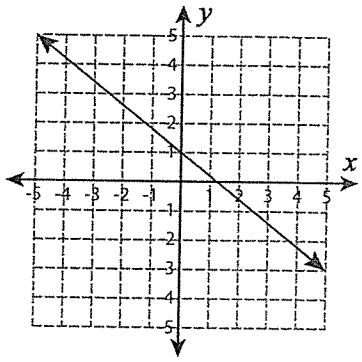
Identify the slope as positive, negative, zero or undefined from each graph.

1) EX

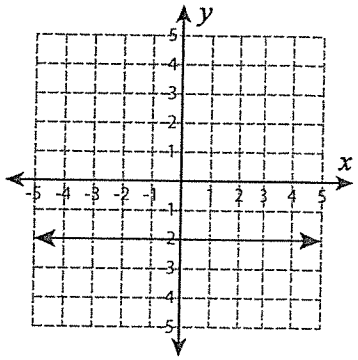


POSITIVE

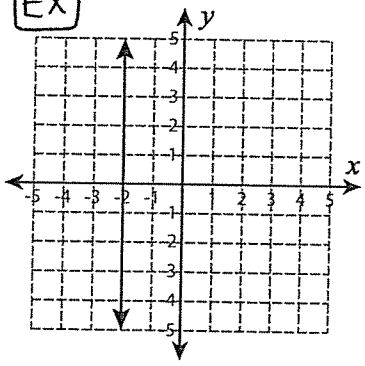
2)



3)

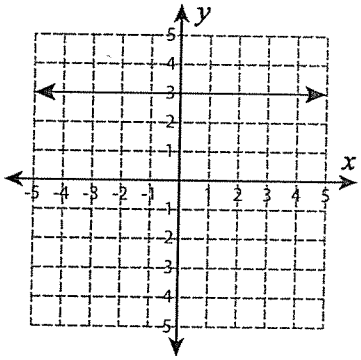


4) EX

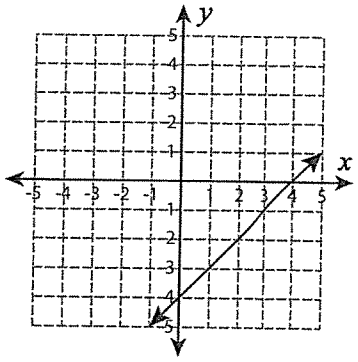


UNDEFINED

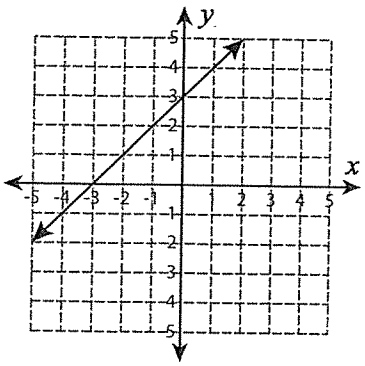
5)



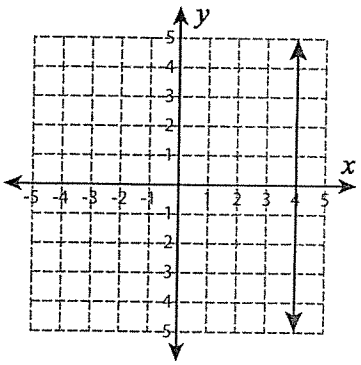
6)



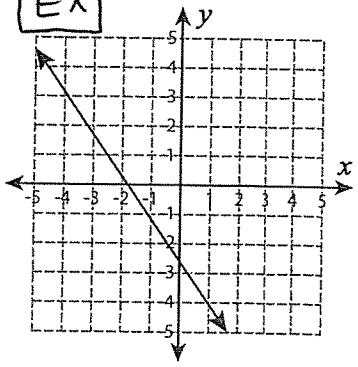
7)



8)



9) EX



NEGATIVE

[6]



(A MATH_RIDDLE)

Name : _____

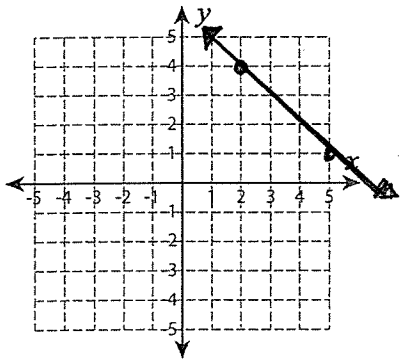
Sheet 1

# Types of Slopes

A) Draw a line through the given coordinates and identify the types of slopes.

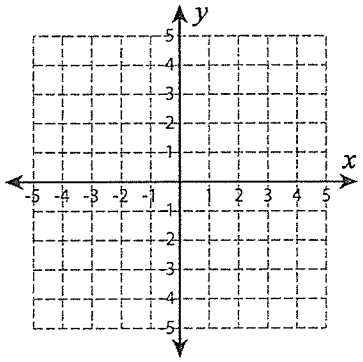
EX

1) (5, 1) and (2, 4)

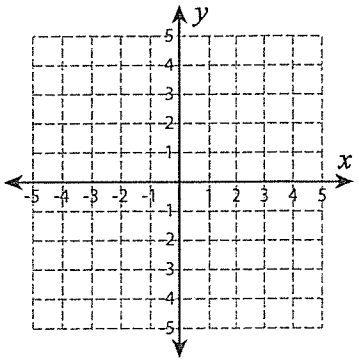


NEGATIVE

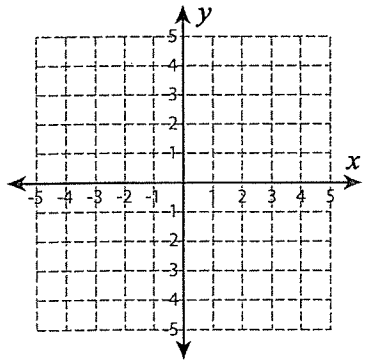
2) (–2, 3) and (–2, –5)



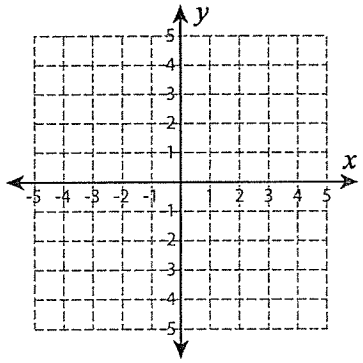
3) (–1, 2) and (–4, 0)



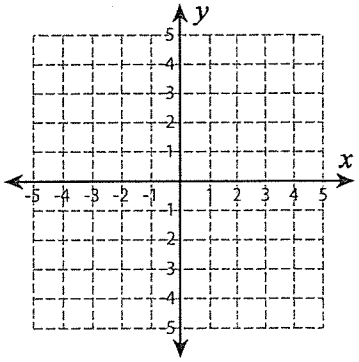
4) (–4, –2) and (1, 2)



5) (0, 5) and (4, 1)

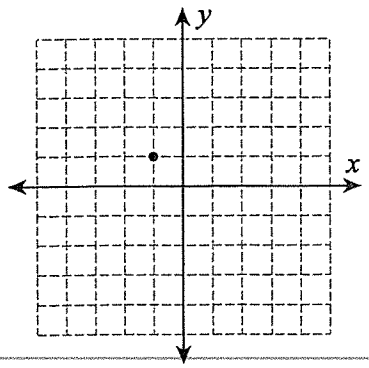


6) (–3, –4) and (5, –4)

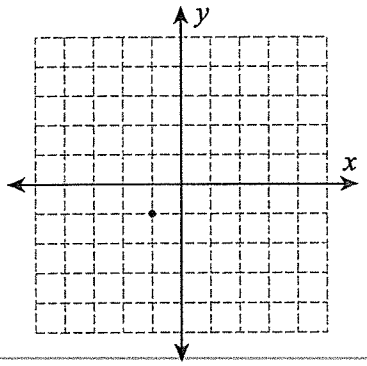


B) Draw a line through the point for the given type of slope.

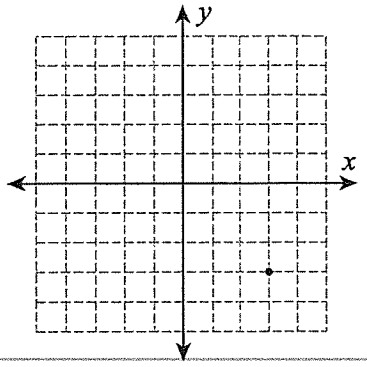
1) Positive slope



2) Zero slope



3) Negative slope



Name : _____ $y = mx + b$ m = slope b = y-intercept Score : _____

# Identify Slope and Intercept

L1S1

Write the slope and y-intercept of each equation.

EX

1) $y = -5x + 6$

Slope = −5

y-INTERCEPT = +6

EX

2) $y = 3x - 2$

Slope = +3

y-INT = −2

3) $y = -2x - 4$

4) $y = 8x + 1$

5) $y = 5x - 3$

6) $y = -3x - 9$

7) $y = 7x + 2$

8) $y = -x + 6$

9) $y = -4x + 7$

10) $y = -6x - 8$

11) $y = 8x - 5$

12) $y = 9x + 3$

[20]

Name : _____ $y = mx + b$ Score : _____

# Equation of a Line

Sheet 1

## Part - A

Find the equation of the line with the given slope and the y-intercept.

EX

1) slope = −3 ; y-intercept = 4

m b

$y = -3x + 4$

EX

2) slope = −1 ; y-intercept = 0

m b

$y = -1x + 0$

3) slope = $\frac{1}{5}$ ; y-intercept = −5

4) slope = 2 ; y-intercept = −9

5) slope = −8 ; y-intercept = 8

6) slope = −4 ; y-intercept = $-\frac{7}{2}$

7) slope = 9 ; y-intercept = 2

8) slope = 5 ; y-intercept = −1

[12]

## Part - B

1) If a line cuts the y-axis at y = −6 and the slope of the line is −10, find the equation of the line.

_____

[4]

2) Find the equation of the tangent whose slope is 3 and has the y-intercept 1.

_____

Name : _____ $y=mx+b$ Score : _____

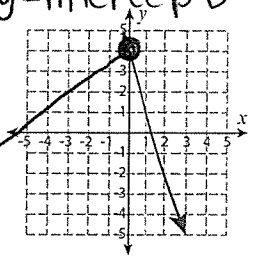
## MCQ

Sheet 1

EX

y-intercept.

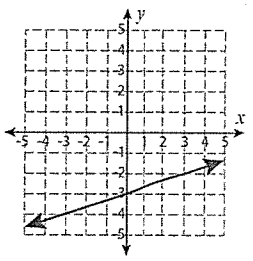
1) Which of the following equation represents the line on the graph?



a) $y=x+4$ b) $y=2x-4$ c) $y=-3x+4$

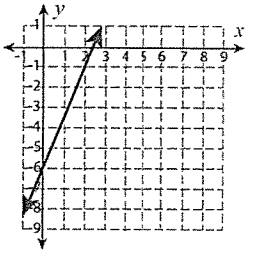
Looks like ⊖ eyebrow so... $-m$

2) Which of the following equation represents the line on the graph?



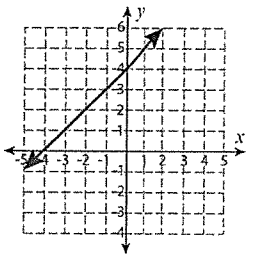
a) $y=-2x+3$ b) $y=\frac{1}{3}x-3$ c) $y=\frac{1}{4}x+3$

3) Which of the following equation represents the line on the graph?



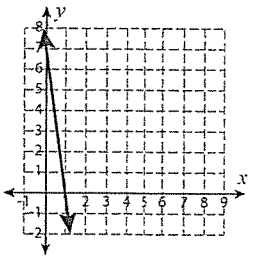
a) $y=3x-6$ b) $y=\frac{5}{2}x-6$ c) $y=-\frac{1}{2}x-6$

4) Which of the following equation represents the line on the graph?



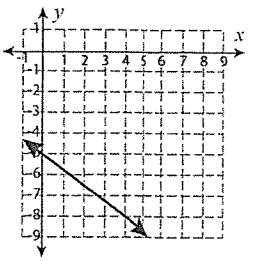
a) $y=x+4$ b) $y=5x-4$ c) $y=-4x+4$

5) Which of the following equation represents the line on the graph?



a) $y=-7x+7$ b) $y=8x-7$ c) $y=4x+7$

6) Which of the following equation represents the line on the graph?



a) $y=6x+5$ b) $y=\frac{5}{4}x+5$ c) $y=-\frac{3}{4}x-5$

[5]

Name : _____

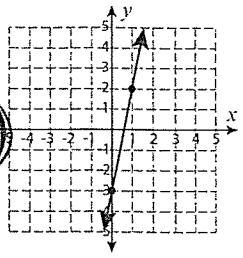
Score : _____

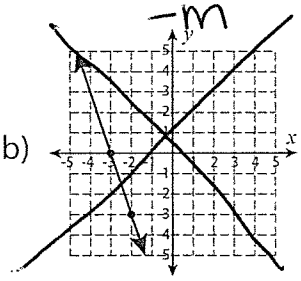
Sheet 1

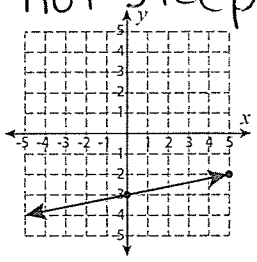
# MCQ

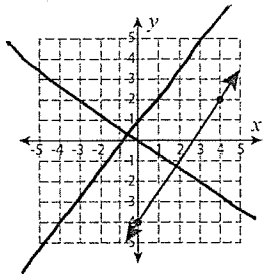
1) Which of the following graph represents the equation $y = 5x - 3$ ?

EX

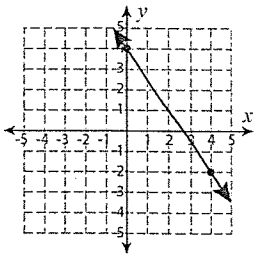
a) 

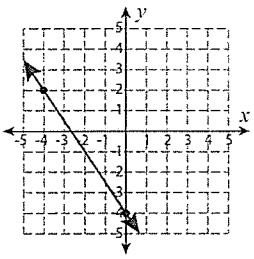
b) 

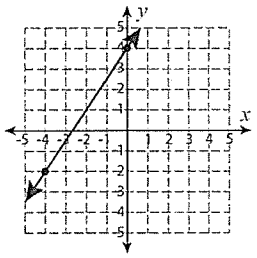

c) 

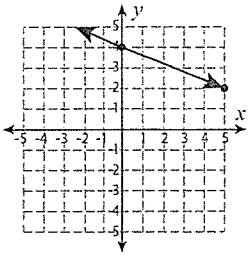

d) 


2) Which of the following graph represents the equation $y = -\frac{2}{5}x + 4$ ?

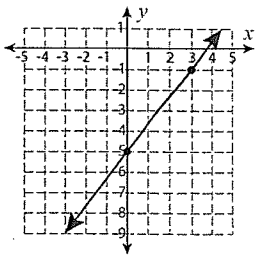
a) 

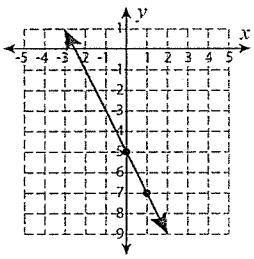
b) 

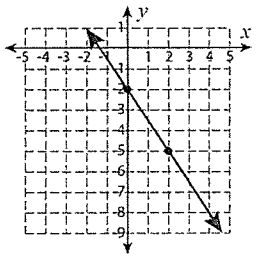
c) 

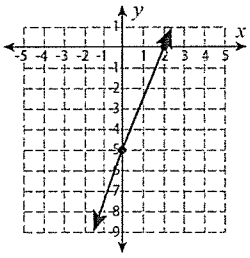
d) 

3) Which of the following graph represents the equation $y = -2x - 5$ ?

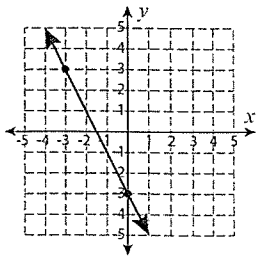
a) 

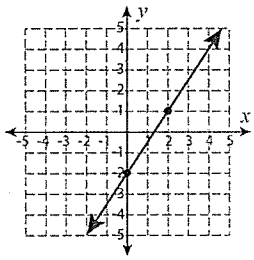
b) 

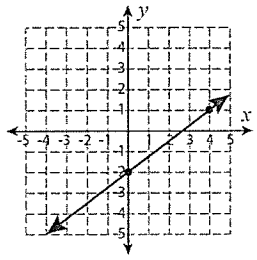
c) 

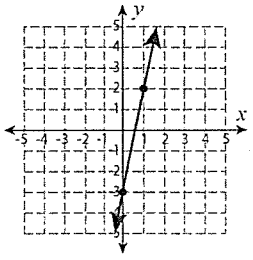
d) 

4) Which of the following graph represents the equation $y = \frac{3}{4}x - 2$ ?

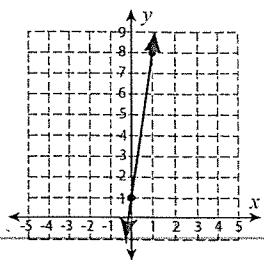
a) 

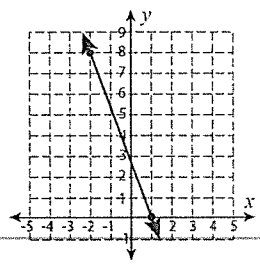
b) 

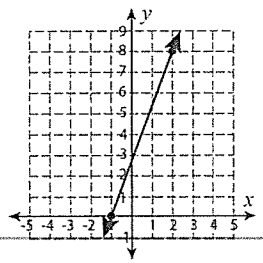
c) 

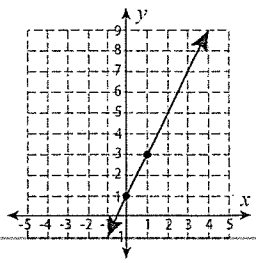
d) 

5) Which of the following graph represents the equation $y = 7x + 1$ ?

a) 

b) 

c) 

d) 

[4]