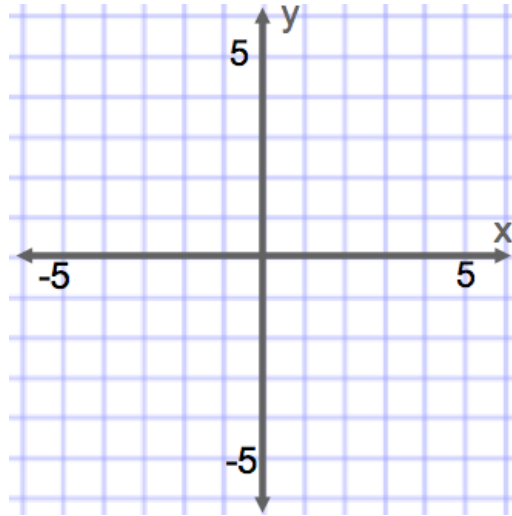


5.4 – Introduction To The Equation $y = mx + b$

Set 1 - Below is a table for the equation $y = 2x$. Use the table and graph the line in the coordinate plane.

x	$y = 2x$	y	(x,y)
-2	$y = 2(-2)$ $= -4$	-4	$(-2,-4)$
-1	$y = 2(-1)$ $= -2$	-2	$(-1,-2)$
0	$y = 2(0)$ $= 0$	0	$(0,0)$
1	$y = 2(1)$ $= 2$	2	$(1,2)$
2	$y = 2(2)$ $= 4$	4	$(2,4)$



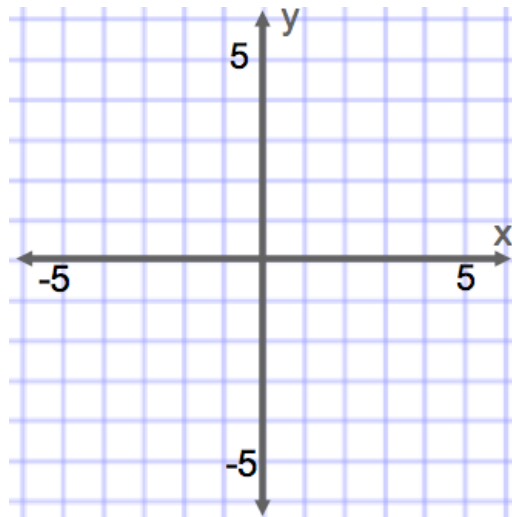
State the coordinate where the line intercepts the y -axis. _____

What is the y value of this coordinate? _____ This value is called the y -intercept.

Use two points on the graph to illustrate what the slope is equal to. _____

Set 2 - Complete the table and graph the equation.

x	$y = 2x + 3$	y	(x,y)
-2			
-1			
0			
1			
2			



State the coordinate where the line intercepts the y -axis. _____

What is the y value of this coordinate? _____ This value is called the y -intercept.

Use two points on the graph to illustrate what the slope is equal to. _____

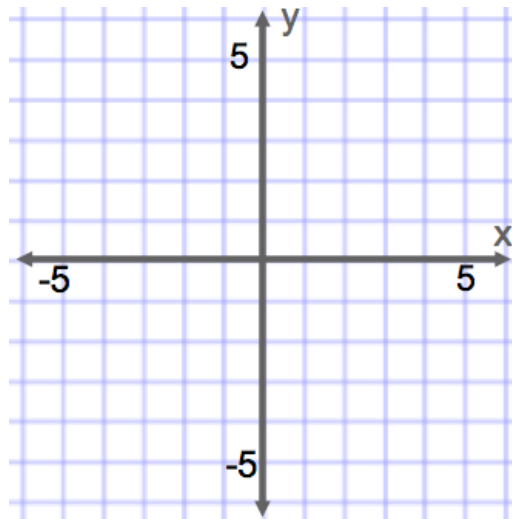
Compare the equation $y = 2x + 3$ with the equation $y = 2x$.

Did the line's interception with the y -axis change? _____

Did the slope of the line change? _____

Set 3 - Complete the table and graph the equation.

x	$y = 2x - 4$	y	(x,y)
-2			
-1			
0			
1			
2			



State the coordinate where the line intercepts the y -axis. _____

What is the y value of this coordinate? _____ This value is called the y -intercept.

Use two points on the graph to illustrate what the slope is equal to. _____

Compare the equation $y = 2x + 3$ with the equation $y = 2x$.

Did the line's interception with the y -axis change? _____

Did the slope of the line change? _____

The value where the line crosses the y - axis is called the y - intercept. Complete Set 4 using the information you found from Set 1 through Set 3.

Set 4 - State the y - intercept for the lines represented by the equations.

$y = 2x$	$y = 2x + 3$	$y = 2x - 4$
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Set 5 - Based on all the information from this lesson and previous ones, label each variable in the equation $y = mx + b$ using items from the word bank.

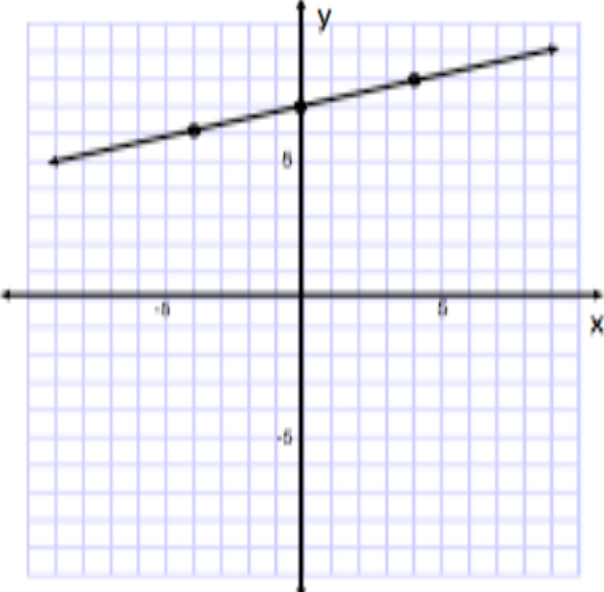
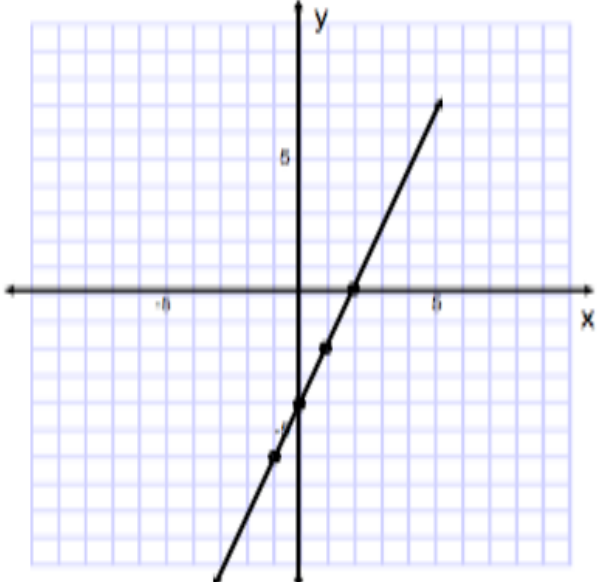
<p><u>WORD BANK</u></p> <p>Slope</p> <p>y – intercept</p> <p>variable used to input values</p> <p>variable that is dependent on the equation</p>	$y = mx + b$
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State the slope and y – intercept for each equation.

<p>LP#1 $y = 3x - 7$</p>	<p>$y = -4x + 10$</p>	<p>$y = \frac{3}{5}x + 2$</p>	<p>$y = -\frac{1}{4}x - 8$</p>
<p>LP#2 $y - 9 = 6x$</p>	<p>$y - 5 = \frac{1}{2}x$</p>	<p>$y + 6 = x$</p>	<p>$y - 7x = -1$</p>

Review – State the slope and y – intercept for each equation or graph.

<p>R#1</p> <ul style="list-style-type: none"> • $y = \frac{1}{2}x + 3$ • $y = -2x - 5$ • $y - 4 = 3x$ 	
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<p>R#2</p> <ul style="list-style-type: none"> • $y = -0.25x + 5.5$ • $y = 6x - 1$ • $y + 2 = \frac{3}{4}x$ 	
<p>R#3</p> <ul style="list-style-type: none"> • $y = \frac{5}{4}x - 3$ • $y = x + 8$ • $y - 1 = -6x$ 	

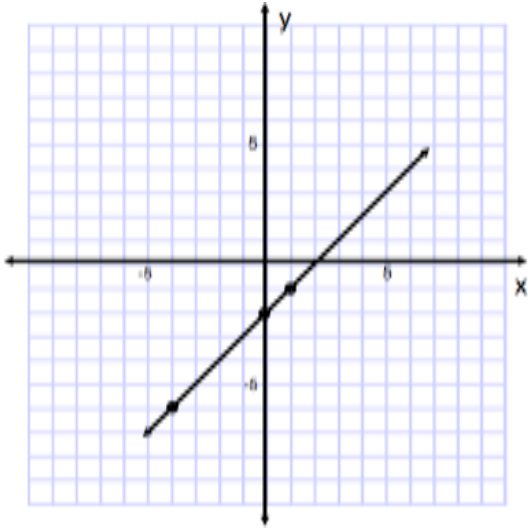
Homework

State the slope and y - intercept for each equation.

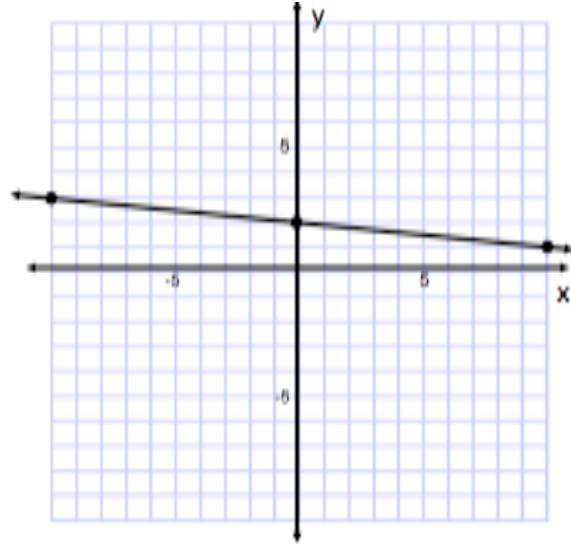
- 1) $y = 5x - 9$
- 2) $y = 3x + 6$
- 3) $y = \frac{4}{7}x + 3$
- 4) $y = -7x - 11$
- 5) $y = x + 4$
- 6) $y = -\frac{1}{3}x - 6$
- 7) $y = -x + 9$
- 8) $y = 8x - 1$
- 9) $y = \frac{6}{5}x - 7$
- 10) $y = 0.5x - 10$
- 11) $y - 7 = 4x$
- 12) $y + 1 = -2x$
- 13) $y - 3 = \frac{5}{2}x$
- 14) $y - 10 = 7x$
- 15) $y + 4 = -3x$
- 16) $y + 2 = \frac{6}{7}x$
- 17) $y - 3x = 4$
- 18) $y + x = 5$
- 19) $y + \frac{1}{4}x = 7$
- 20) $y - 7x = -11$

Instructions - A) State the slope and y – intercept for each graph. B) State the equation for the line.

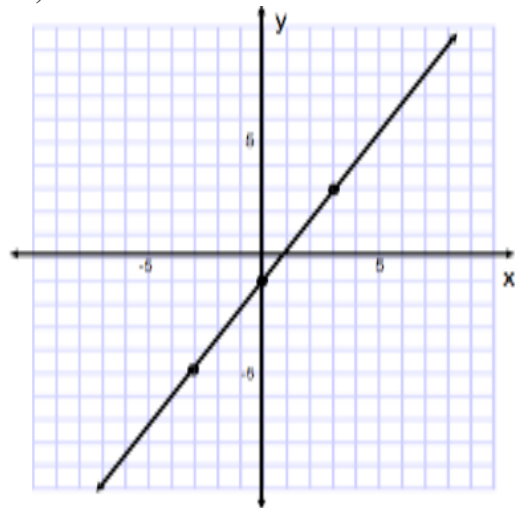
21)



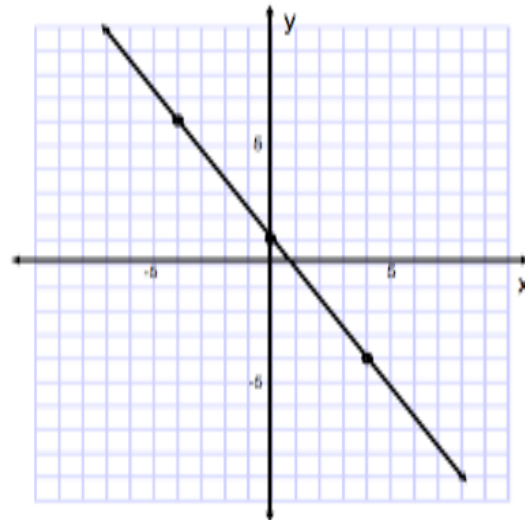
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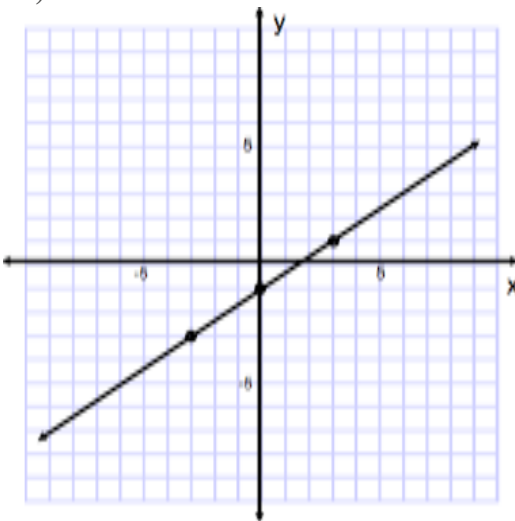
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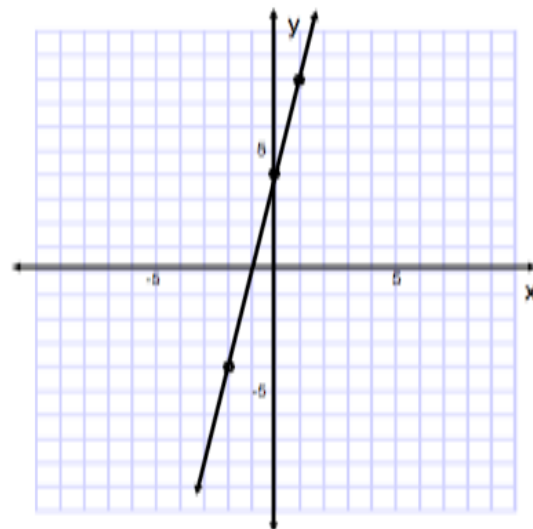
24)



25)



26)



Synthesis