Algebra Graded Assignment Name _____

1. Determine if the following tables represent a function relationship. If so, determine if it's a linear relationship by calculating the **rate of change or slope, y-intercept and equation.**

x	y
3	17
5	9
7	1
9	-7

x	y
2	4
5	25
8	64
11	121

2. Match the graph or equation to the correct description.

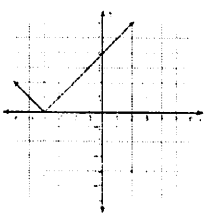
Linear Function **Quadratic Function** **Absolute Value Function** **Exponential Function** **Not a Funtion**

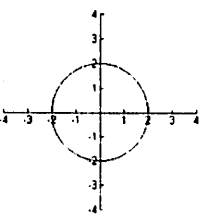
$y = \frac{3x}{4}$

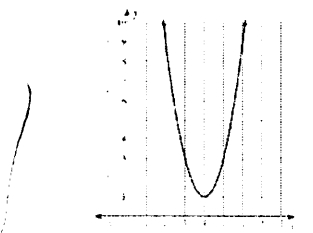
$y + 6 = 2^x$

$2^2 = \frac{x}{4} + y$

$y^2 = x + 4$





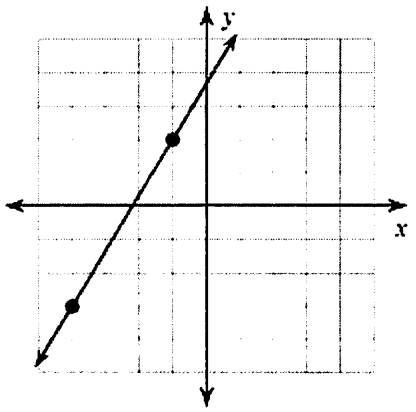


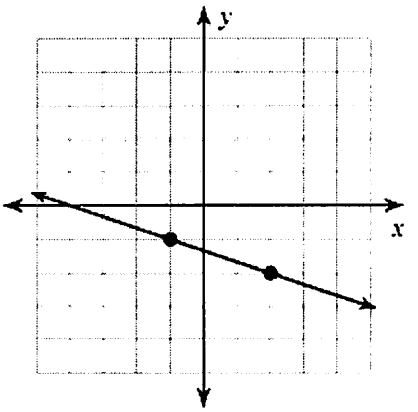
_____ _____ _____

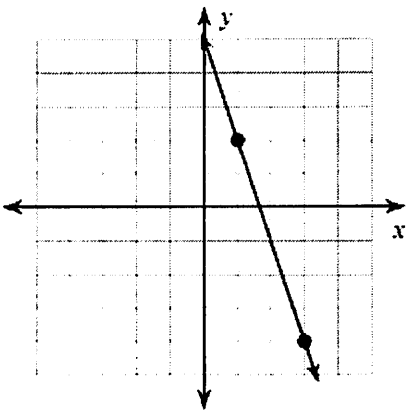
3. Find the slope and y-intercept of each equation.

$y = -\frac{1}{4}x + 5$ $g(x) = -8x + 34$ $2y = 2x - 6$ $7y - 2x = 35$

4. Find the Slope of the line on the graph.







5. Calculate the slope of a line given two points and circle the type of linear graph the slope would produce.

(1, 2) and (3, 4)

Uphill Downhill

Horizontal Vertical

(-8, 2) and (4, -6)

Uphill Downhill

Horizontal Vertical

(17, -13) and (17, 9)

Uphill Downhill

Horizontal Vertical

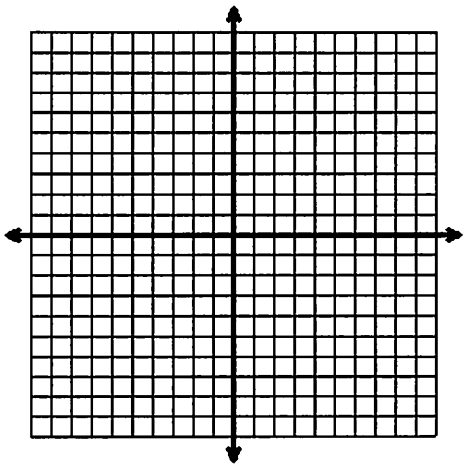
(19, -2) and (-11, 10)

Uphill Downhill

Horizontal Vertical

6. Graph the following equations

$y = \frac{2}{3}x + 3$

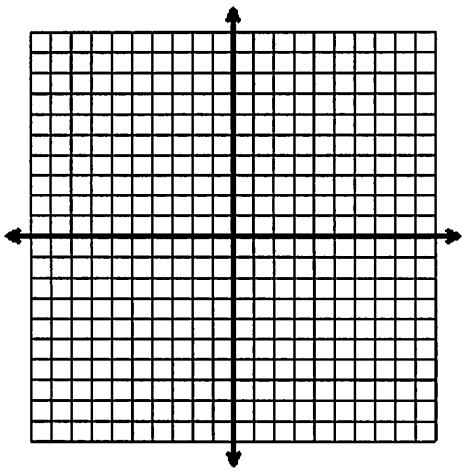


Circle the Coordinates that are on the line.

(-3 , 1) (2 , 5) (-5 , $-\frac{1}{3}$)

Show that ONE works algebraically

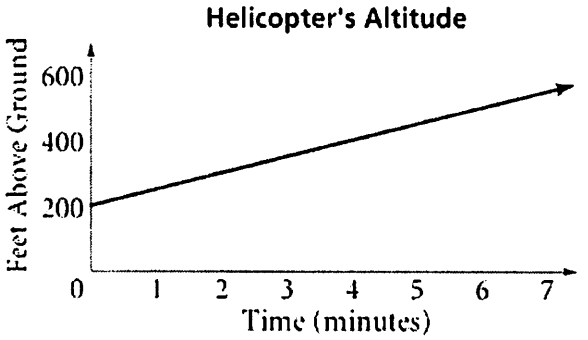
$4y - 8x = 24$

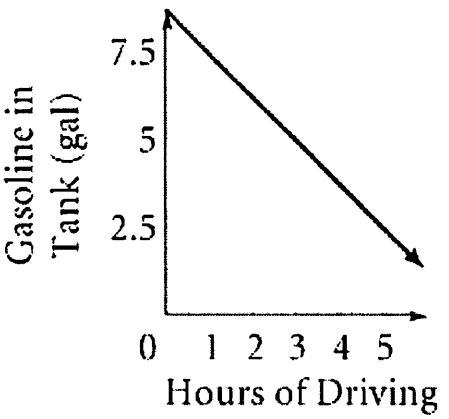


What is the coordinate of the x-intercept?

Is the point (-4, 6) on the line? Justify your answer

7. Determine the linear equation for each of the following graphs.





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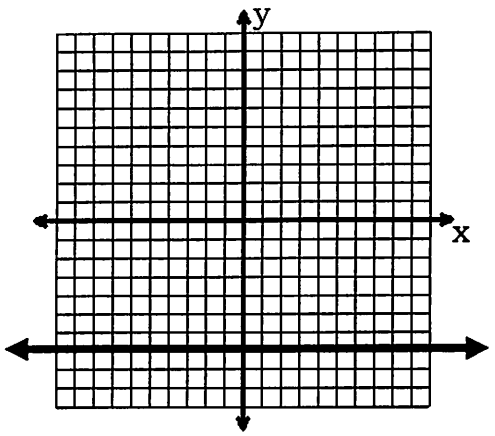
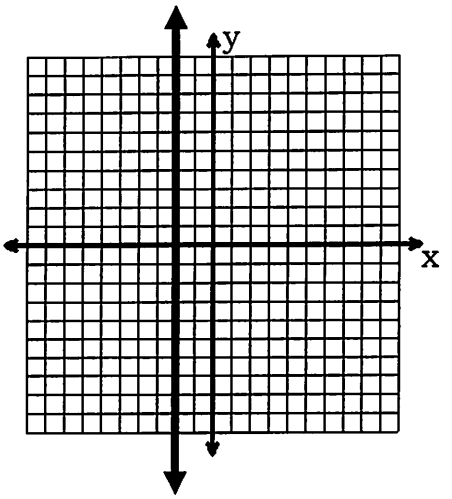
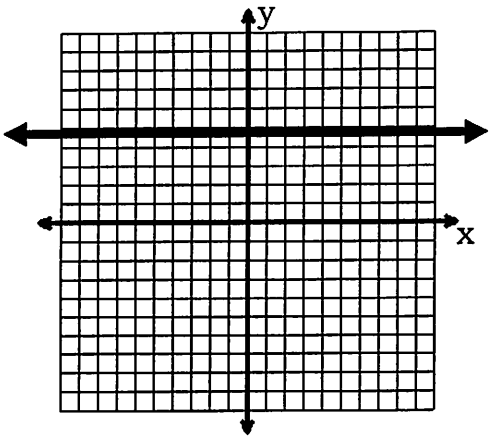
8. Find or Graph the Equations of each Line





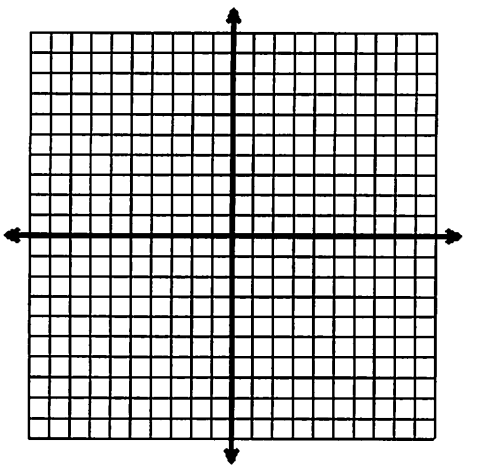


9. What is the $y-$ intercept of the line $y+3=4(x+3)$?

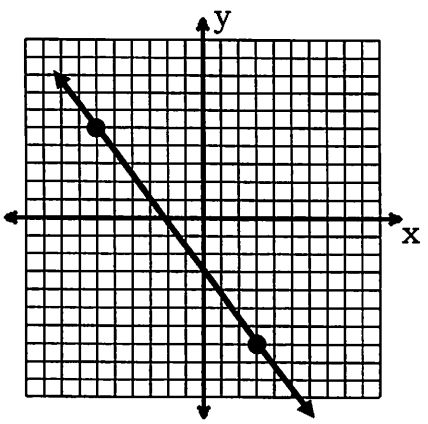
10. Is the point (4, 11) on the line of the equation $y-5=2(x-1)$?

11. Write the equation in *slope-intercept form* ($y=mx+b$) of a line that passes through the point (-3, -5) and has the same slope as $y+2=7(x+3)$.

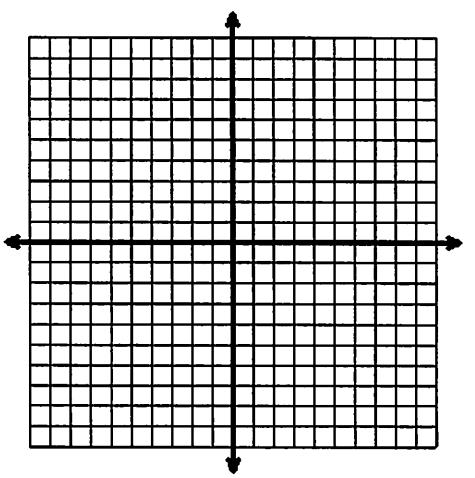
12. Write the equation of a line with a slope of $-\frac{2}{3}$ and that passes through the point (-6, 7).



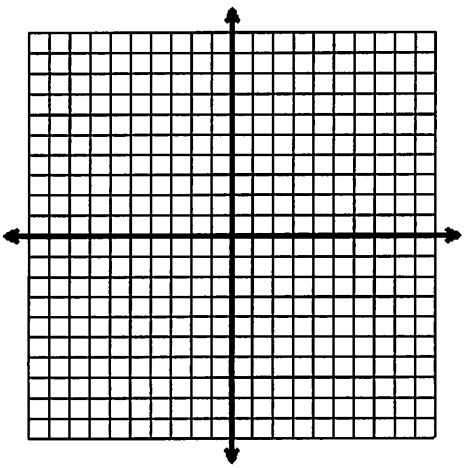
13. Write the equation of the line in the graph below in **point-slope form** and **slope-intercept form**.



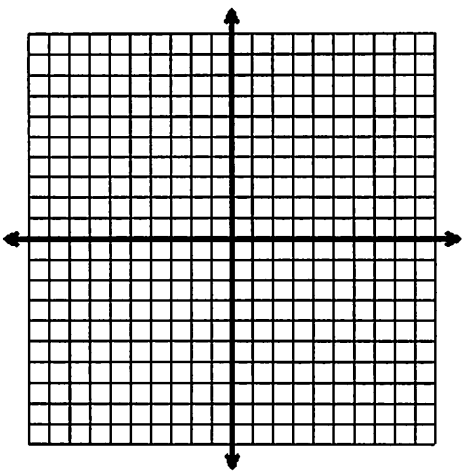
14. Find the equation of the line that passes through (5, 4) and (-5, 0) in slope-intercept form.



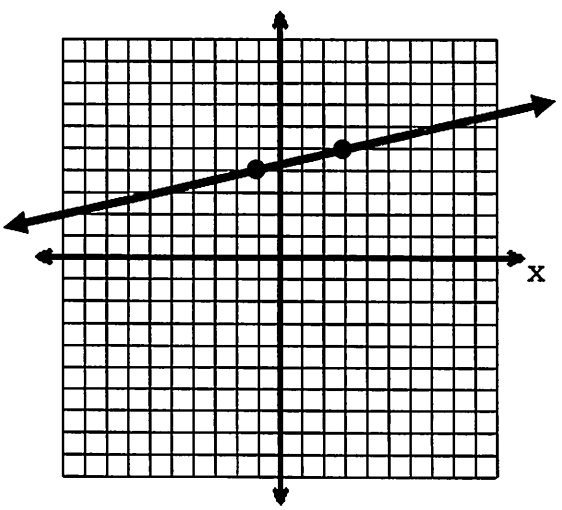
15. Find the equation of the line that passes through (2, 5) and (-1, -4) in point-slope form.



16. Determine if the point (25, -2) is on the line that passes through (10, -8) and (5, -10)



17. Graph <u>and</u> write the equation of a line that is **parallel** to the line graphed below.



Algebra Graded Assignment Name _____

1. Determine if the following tables represent a function relationship. If so, determine if it's a linear relationship by calculating the **rate of change or slope, y-intercept and equation.**

x	y
3	17
5	9
7	1
9	-7

+3, +2, +2, +2 | 0, 29, -12 | -8, -8, -8

Function: Yes
Linear: Yes
$m = \frac{-8}{2} = -4$
Y-int: (0, 29)
$y = -4x + 29$

x	y
2	4
5	25
8	64
11	121

+3, +3, +3 | +21, +39, +57

Function: Yes
Linear: No
Not a constant rate of change $\frac{\Delta y}{\Delta x}$

2. Match the graph or equation to the correct description.

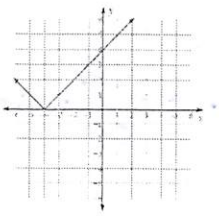
Linear Function | **Quadratic Function** | **Absolute Value Function** | **Exponential Function** | **Not a Funtion**

$y = \frac{3x}{4}$ Linear

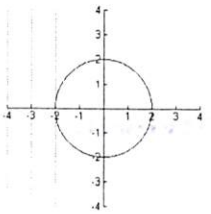
$y + 6 = 2^x$ Exponential

$2^2 = \frac{x}{4} + y$ Linear

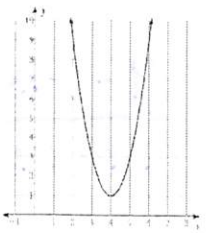
$\sqrt{y^2} = \sqrt{x+4}$ Not A Function
$y = \pm\sqrt{x+4}$



Absolute Value



Not A Function



Quadratic Function

3. Find the slope and y-intercept of each equation.

$y = -\frac{1}{4}x + 5$

$m = -\frac{1}{4}$

y-int: (0, 5)

$g(x) = -8x + 34$

$m = -8$

y-int: (0, 34)

$\frac{2y}{2} = \frac{2x}{2} - \frac{6}{2}$

$y = x - 3$

$m = 1$

y-int: (0, -3)

$7y - 2x = 35$

$+2x \quad +2x$

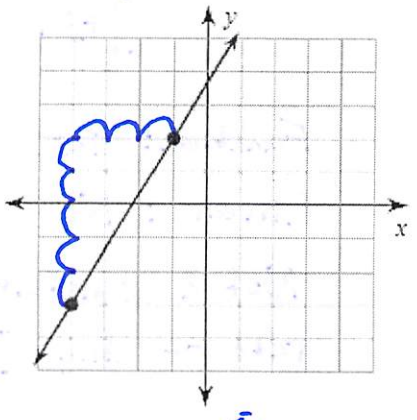
$\frac{7y}{7} = \frac{2x}{7} + \frac{35}{7}$

$y = \frac{2}{7}x + 5$

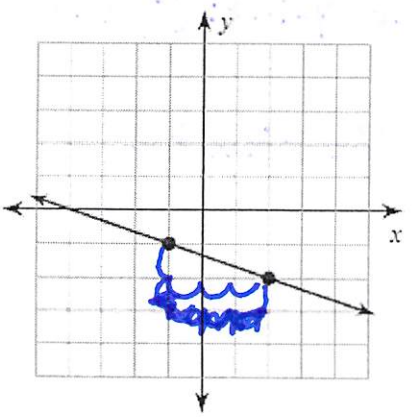
$m = \frac{2}{7}$

y-int: (0, 5)

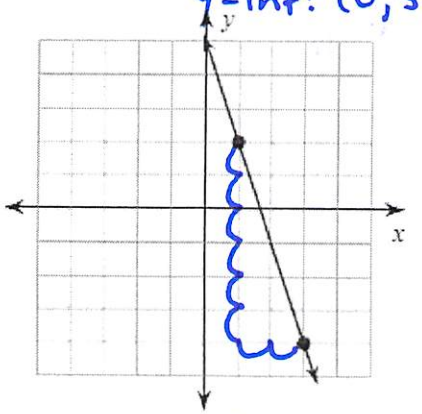
4. Find the Slope of the line on the graph.



$m = \frac{5}{3}$



$m = -\frac{1}{3}$



$m = \frac{-6}{2} = -3$

5. Calculate the slope of a line given two points and circle the type of linear graph the slope would produce.

$x_1\ y_1 \quad x_2\ y_2$

(1, 2) and (3, 4)

$\frac{4-2}{3-1} = \frac{2}{2} = 1$

(Uphill) Downhill

Horizontal Vertical

$x_1\ y_1 \quad x_2\ y_2$

(-8, 2) and (4, -6)

$\frac{-6-2}{4-(-8)} = \frac{-8}{12} = -\frac{2}{3}$

Uphill (Downhill)

Horizontal Vertical

$x_1\ y_1 \quad x_2\ y_2$

(17, -13) and (17, 9)

$\frac{9-(-13)}{17-17} = \frac{22}{0} \Rightarrow$ undefined

Uphill Downhill

Horizontal (Vertical)

$x_1\ y_1 \quad x_2\ y_2$

(19, -2) and (-11, 10)

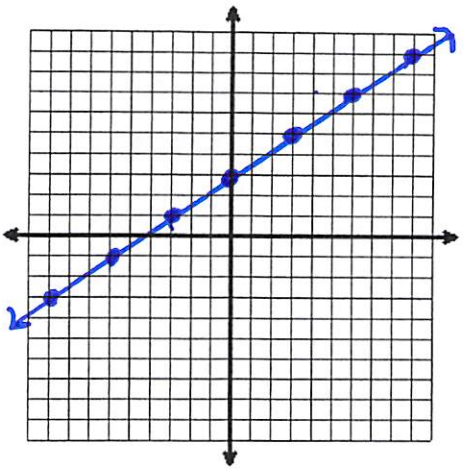
$\frac{10-(-2)}{-11-19} = -\frac{12}{30} = -\frac{2}{5}$

Uphill (Downhill)

Horizontal Vertical

6. Graph the following equations

$y = \frac{2}{3}x + 3$



Circle the Coordinates that are on the line.

(-3 , 1) (2, 5) $(-5, -\frac{1}{3})$

Show that ONE works algebraically

$-\frac{1}{3} = \frac{2}{3}(-5) + 3$

$-\frac{1}{3} = -\frac{10}{3} + \frac{9}{3}$

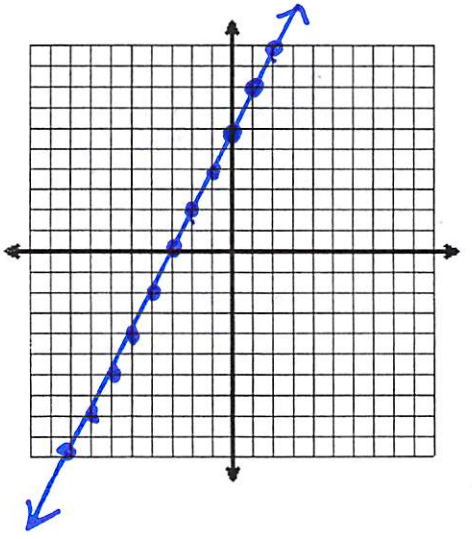
$-\frac{1}{3} = -\frac{1}{3}$ ✓

$4y - 8x = 24$

$+8x \quad +8x$

$\frac{4y}{4} = \frac{8x}{4} + \frac{24}{4}$

$y = 2x + 6$



What is the coordinate of the x-intercept?

(-4, 0)

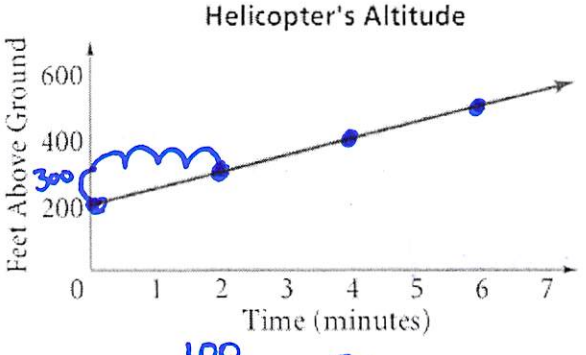
Is the point (-4, 6) on the line? Justify your answer

$4(6) - 8(-4) \stackrel{?}{=} 24$

$24 + 32 \stackrel{?}{=} 24$

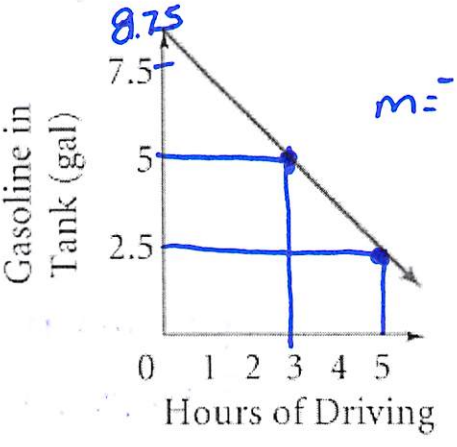
$54 \neq 24$ No!

7. Determine the linear equation for each of the following graphs.



$m = \frac{100}{2} = 50$

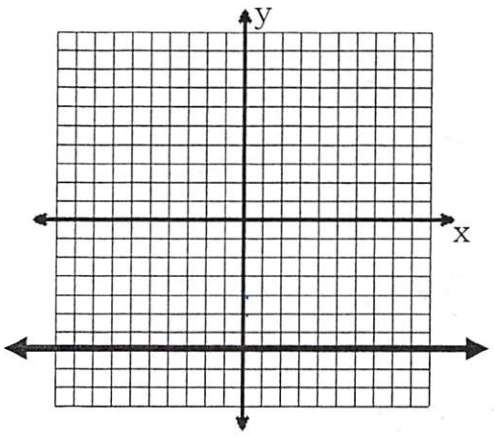
$y = 50x + 200$

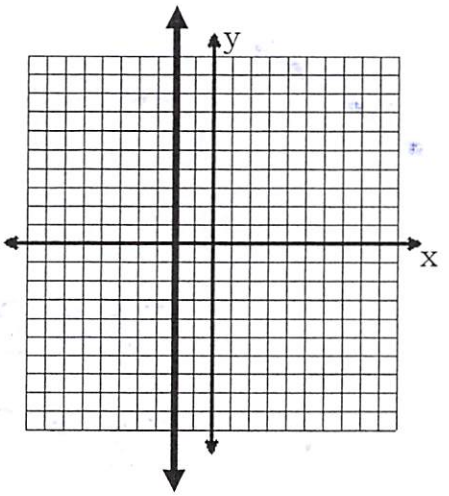


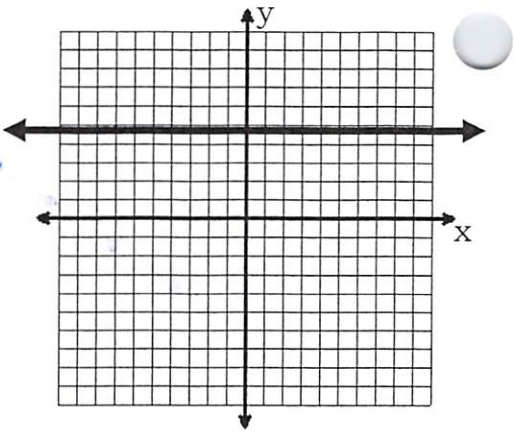
$m = \frac{-2.5}{2} = -1.25$

$y = -1.25x + 8.75$

8. Find or Graph the Equations of each Line







$x = -7$ $x = -3$ $y = 5$

9. What is the y – intercept of the line $y+3=4(x+3)$?

(0, 9)

$y+3=4(0+3)$

$y+3=12$

$-3 \quad -3$

$y=9$

10. Is the point (4, 11) on the line of the equation $y-5=2(x-1)$?

$11-5=2(4-1)$

$6=2(3)$ Yes

$6=6$ ✓

11. Write the equation in *slope-intercept form* ($y=mx+b$) of a line that passes through the point (-3, -5) and has the same slope as $y+2=7(x+3)$.

$m=7$

$y=mx+b$

$-5=7(-3)+b$

$-5=-21+b$

$+21 \quad +21$

$16=b$

$y=7x+16$

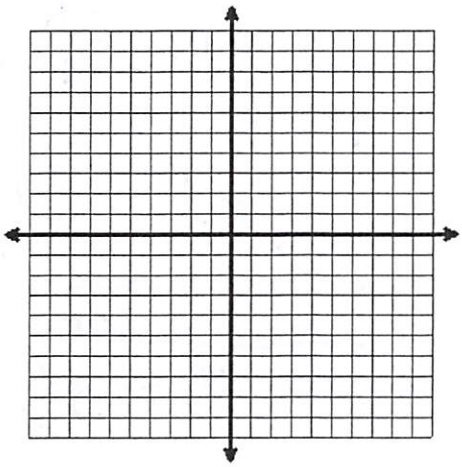
12. Write the equation of a line with a slope of $-\frac{2}{3}$ and that passes through the point (-6, 7).

$y - 7 = -\frac{2}{3}(x + 6)$

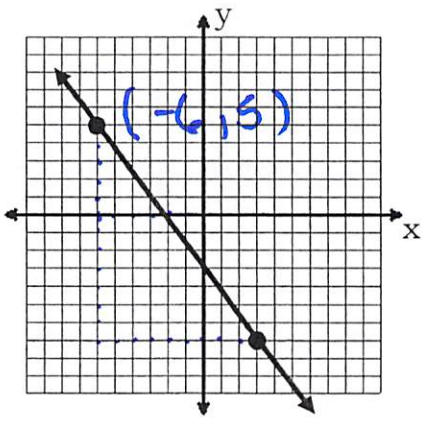
$y - 7 = -\frac{2}{3}x - 4$

$+7 \qquad +7$

$y = -\frac{2}{3}x + 3$



13. Write the equation of the line in the graph below in **point-slope form** and **slope-intercept form**.



$m = \frac{-12}{9} = -\frac{4}{3}$

$y - 5 = -\frac{4}{3}(x + 6)$

$y - 5 = -\frac{4}{3}x - 8$

$+5 \qquad +5$

$y = -\frac{4}{3}x - 3$

14. Find the equation of the line that passes through (5, 4) and (-5, 0) in slope-intercept form.

$m = \frac{0 - 4}{-5 - 5} = \frac{-4}{-10} = \frac{2}{5}$

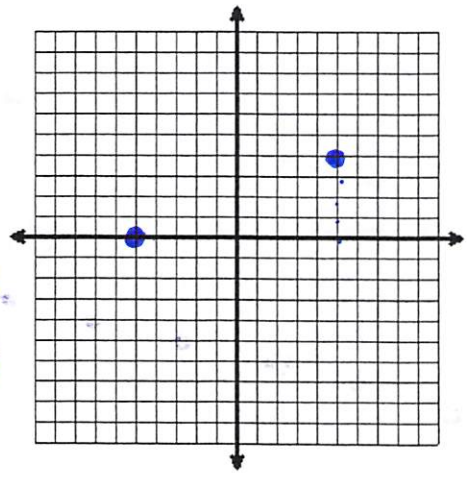
$y = mx + b$

$0 = \frac{2}{5}(-5) + b$

$0 = -2 + b$

$2 = b$

$y = \frac{2}{5}x + 2$



$y - y_1 = m(x - x_1)$

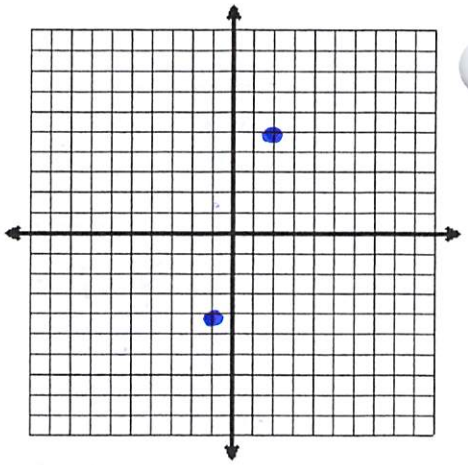
15. Find the equation of the line that passes through (2, 5) and (-1, -4) in point-slope form.

$m = \frac{-4-5}{-1-2} = \frac{-9}{-3} = 3$

$y - 5 = 3(x - 2)$

or

$y + 4 = 3(x + 1)$



16. Determine if the point (25, -2) is on the line that passes through (10, -8) and (5, -10)

$m = \frac{-10-(-8)}{5-10} = \frac{-2}{-5} = \frac{2}{5}$

$y + 10 = \frac{2}{5}(x - 5)$

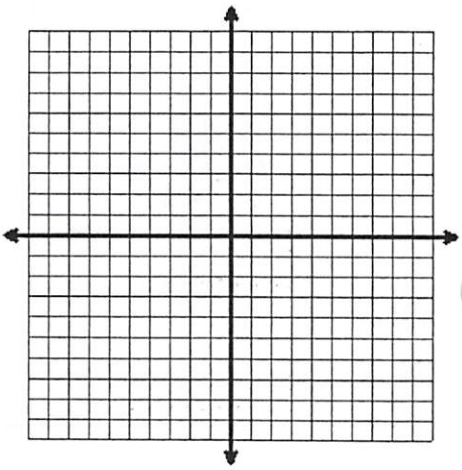
$(25, -2)$

$-2 + 10 = \frac{2}{5}(25 - 5)$

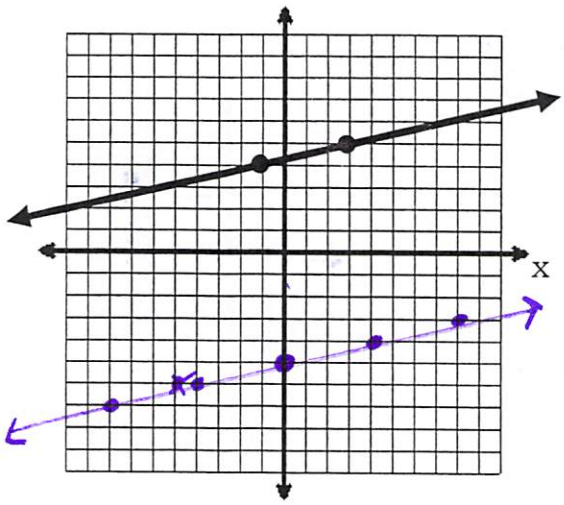
$8 = \frac{2}{5}(20)$

$8 = 8$ ✓

Yes it is on the line



17. Graph and write the equation of a line that is **parallel** to the line graphed below.



$m = \frac{1}{4}$

$y = \frac{1}{4}x - 5$