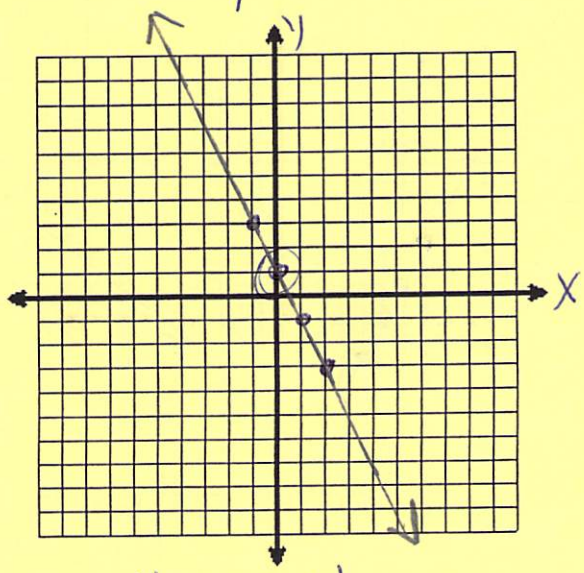
6-2 Slope Intercept Form of a Line

For this chapter, we will be examining **Linear Functions** and their graphs. A **Linear Function** is a function that graphs a straight line. Linear Functions are in the form $y = mx + b$

x	y
-1	3
0	1
1	-1
2	-3

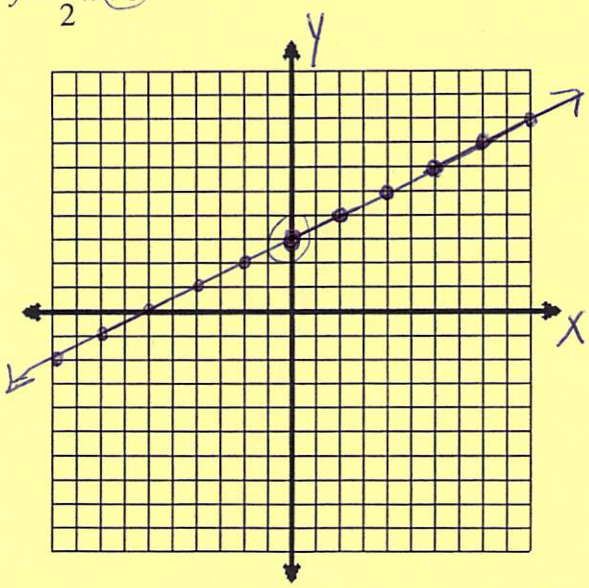


Line crosses y-axis

$y = mx + b$ (slope, y-int)

Slope of the Line:	y-intercept:	**Equation of the Line:**
$m = \frac{rise}{run} = \frac{-2}{1} = -2$	$+1$	$y = -2x + 1$

1. $y = \frac{1}{2}x + 3$



Slope (m): $\frac{1}{2}$

Direction of Line: uphill

Coordinate of y-intercept: $+3$ $(0, 3)$

Is the point $(6, 5)$ on the line? (x, y)

No!

$y = \frac{1}{2}x + 3$

$5 = \frac{1}{2}(6) + 3$

$3 + 3$

$5 \neq 6$

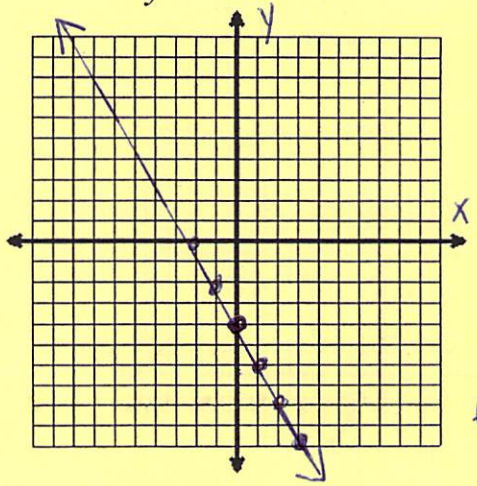
$m = \frac{-2}{1}$ y-int: -4

$m = \frac{3}{4}$ y-int: 1

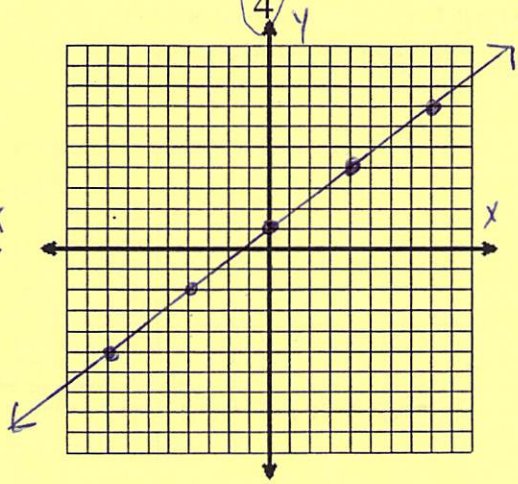
$m = \frac{-1}{1}$ y-int: 0

Let's Practice Graphing a Few!

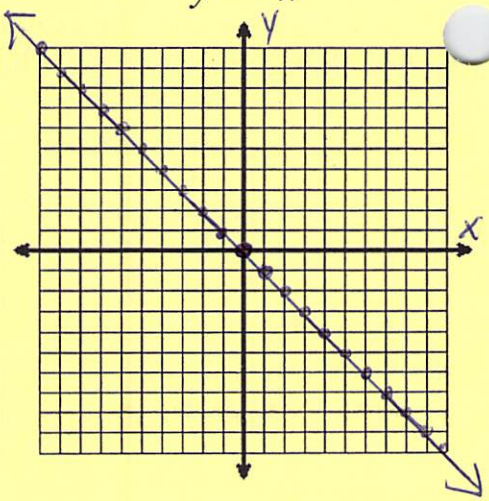
$y = -2x - 4$



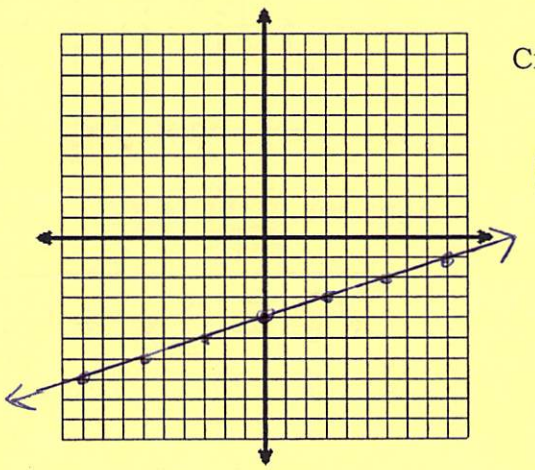
$y = \frac{3}{4}x + 1$



$y = -x$



$y = \frac{1}{3}x - 4$

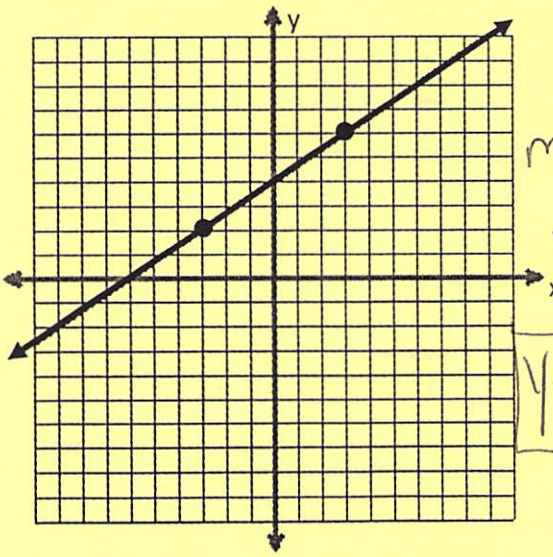


Circle the Coordinates that are on the line.

(-3, -5) (2, -6) (-5, -5)

(7, -2) (9, -1) (-6, -6)

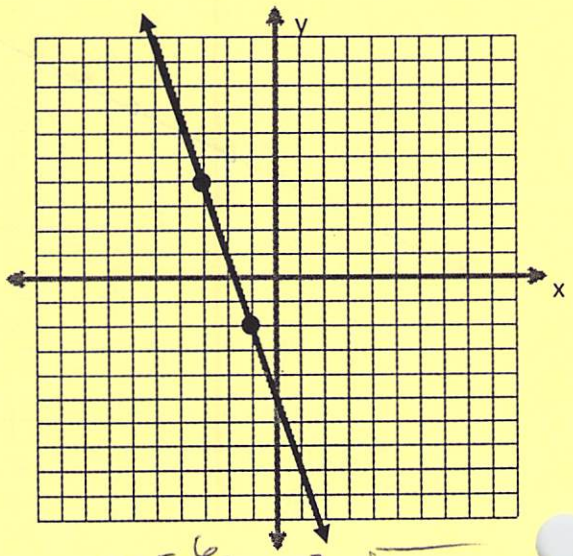
Write the equation for each linear equation that is graphed below.



$m = \frac{4}{6} = \frac{2}{3}$

y-int: 4

$y = \frac{2}{3}x + 4$



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

y-int: -5

$y = -3x - 5$

Graph these lines on the same grid and label each line.

y = 3

x	y
0	3
5	3
-3	3

y = -6

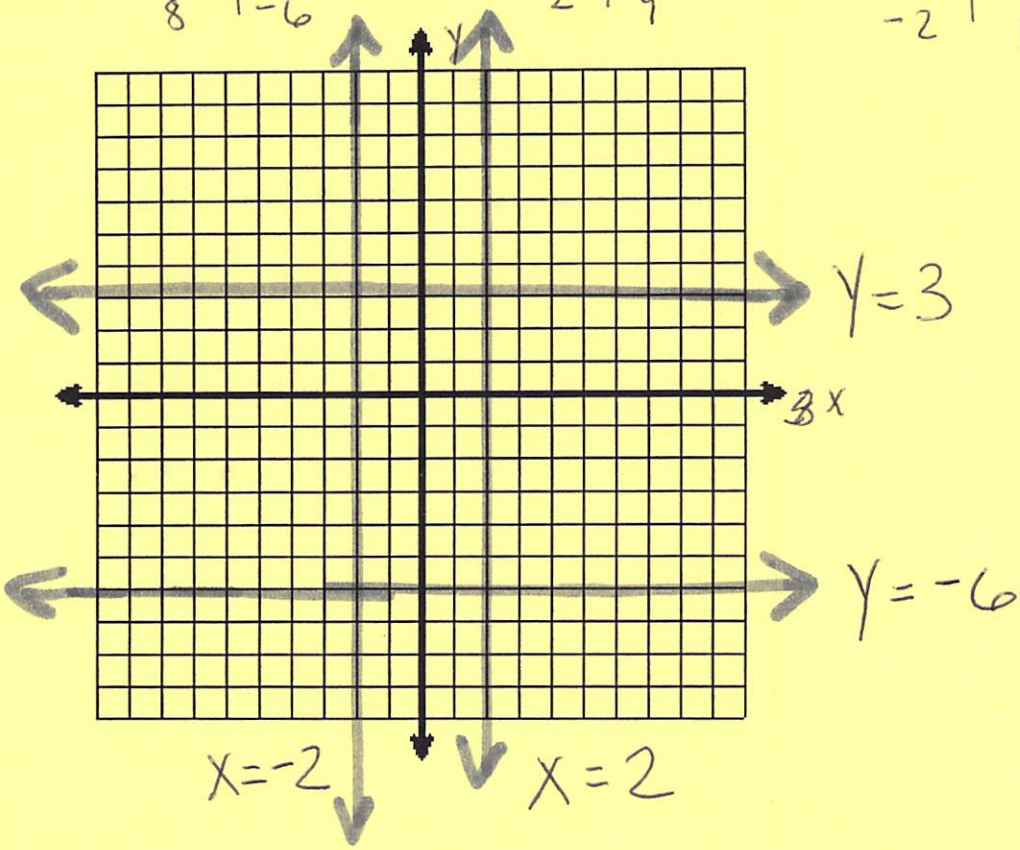
x	y
6	-6
7	-6
8	-6

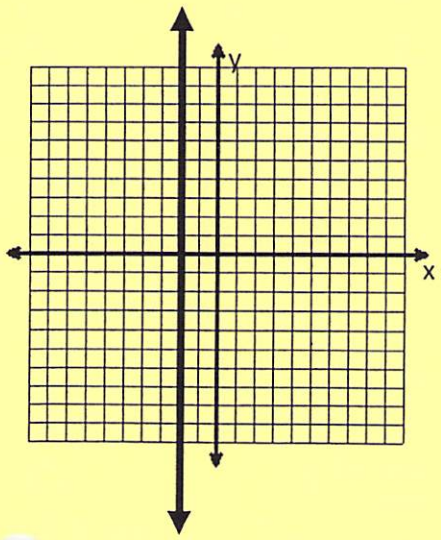
x = 2

x	y
2	-3
2	5
2	9

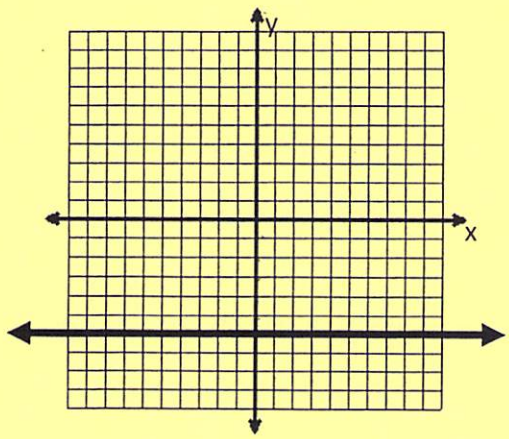
x = -2

x	y
-2	-5
-2	0
-2	1

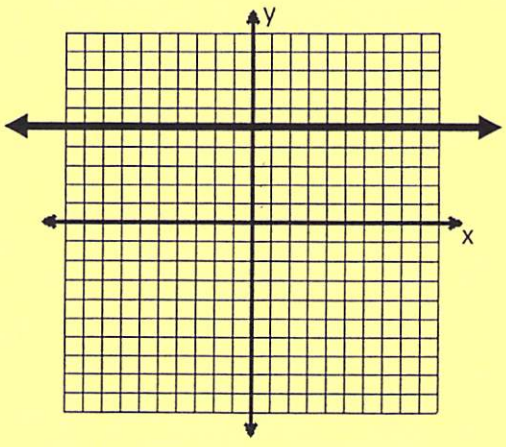




x = -2



y = 6

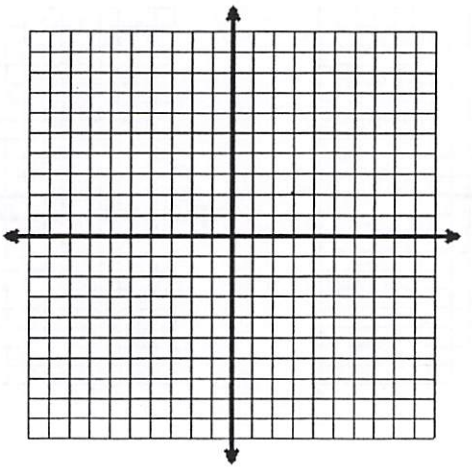


y = 5

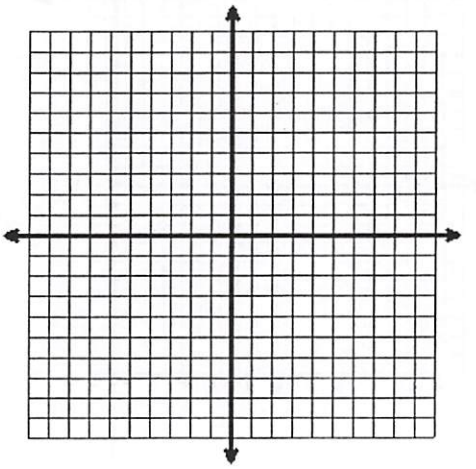
Practice 6-2

Name _____

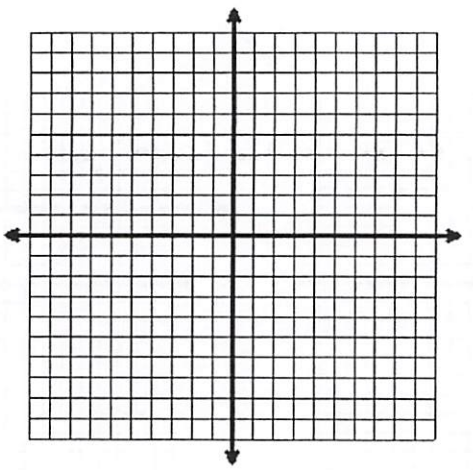
$y = 2x - 5$



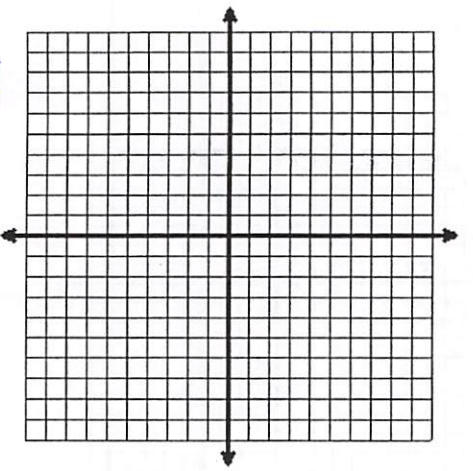
$y = \frac{-4}{3}x + 7$



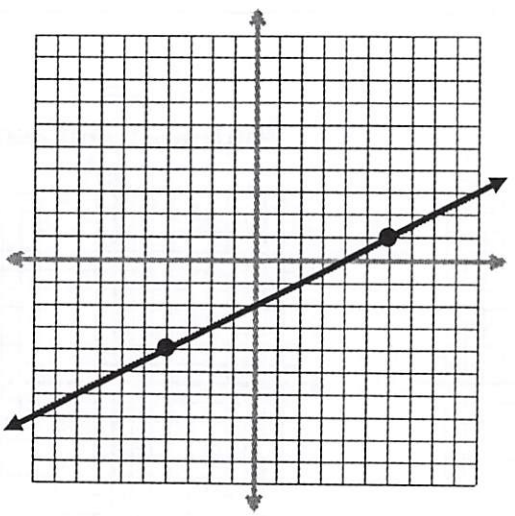
$y = -3x - 2$



$y = \frac{5}{3}x + 4$



Find the Equation of the Graph



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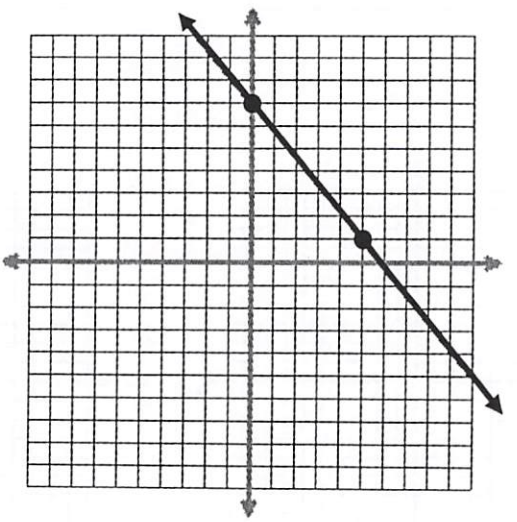
Find the Equation of the Graph



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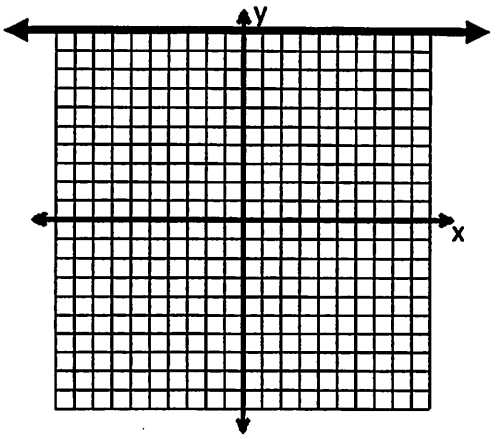
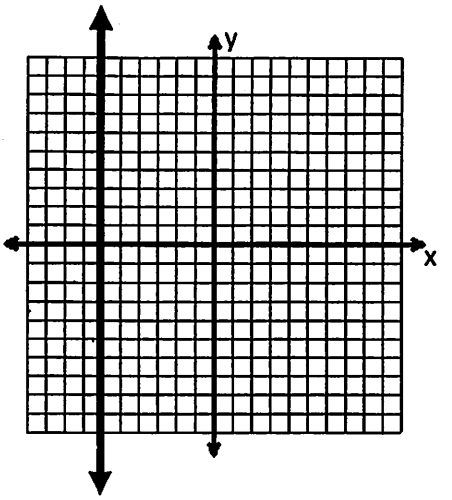
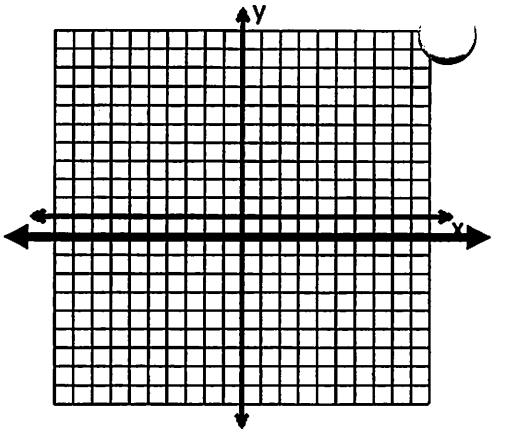
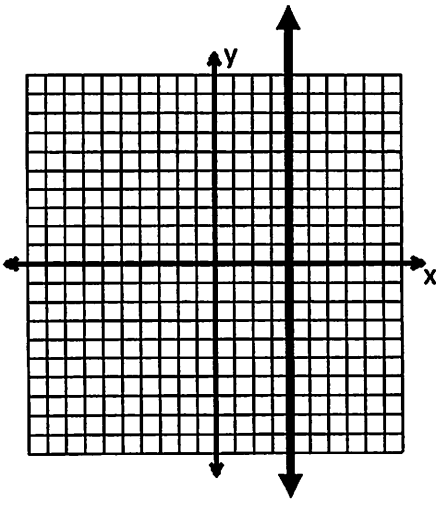
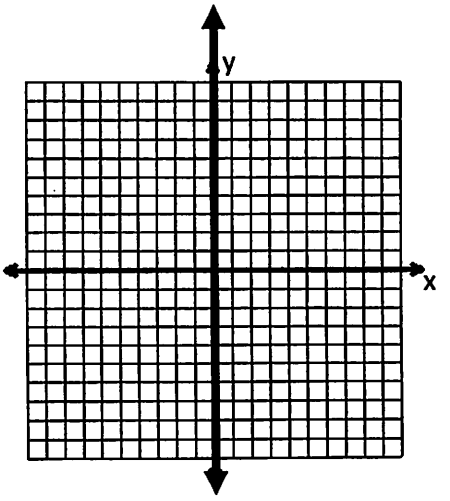
Find or Graph the Equations of each Line

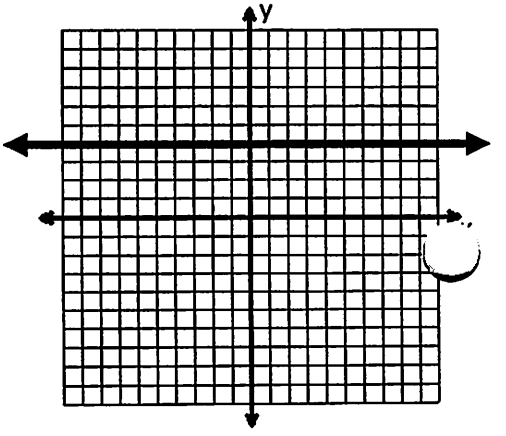




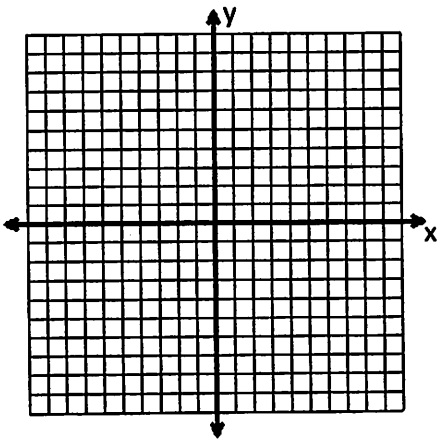




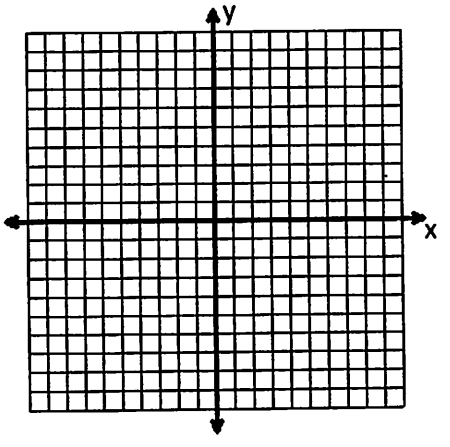




$x = 2$



$y = -5$



$y = x$

Hint: m=1 and b=0