SLOPE-INTERCEPT FORM y = mx + b

m is the Slope b is the y-intercept (crosses y-axis).

Write the equation of a line **given the slope** and **y-intercept**.

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

1. Slope is -2 and a y-intercept of 5

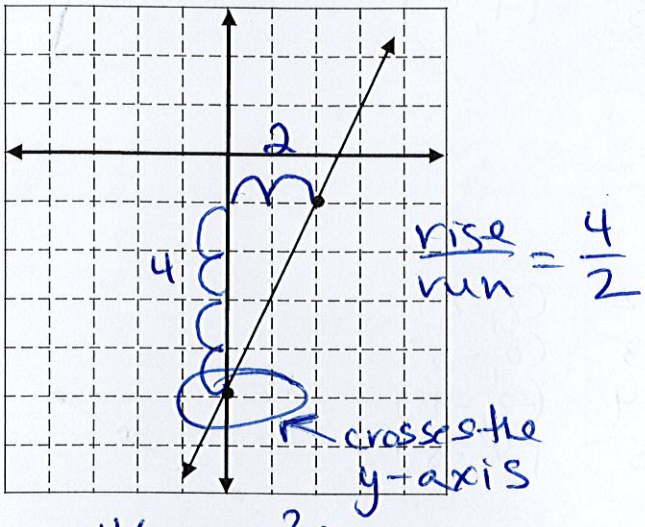
$y = -2x + 5$

2. Slope is $\frac{3}{4}$ and y-intercept is -3

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

Write the equation of a line in slope intercept form given a graph.

3.

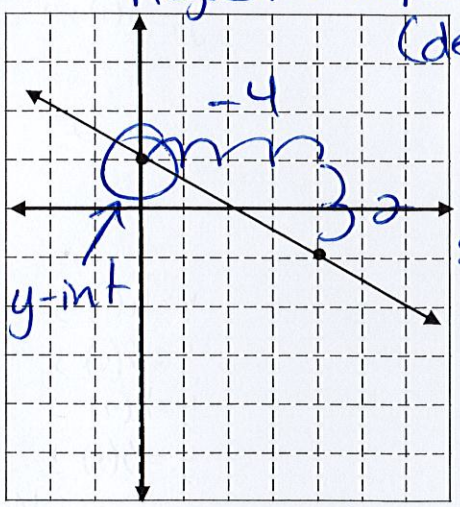


Slope: 4/2 or 2/1

y-intercept: -5

Equation: $y = 4/2x - 5$ or $y = 2/1x - 5$

4.



Slope: -2/4 or -1/2

y-intercept: 1

Equation: $y = -1/2x + 1$

5. $y = 3x + 1$ (Slope, y-int)

x	y = 3x + 1	f(x) = 3x + 1	(x, y)
2	y=3(2)+1 =	f(2) = 3(2)+1	(2, 7)
0	y=3(0)+1=	f(0) = 3(0)+1	(0, 1)
-1	y=3(-1)+1=	f(-1) = 3(-1)+1	(-1, -2)

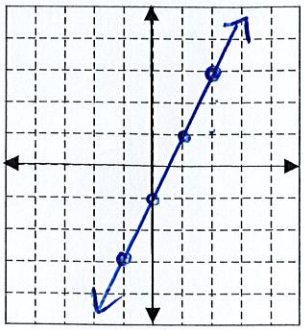
Slope 3/1

y-intercept 1

Classwork: Graph

1. $y = 2x - 1$

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

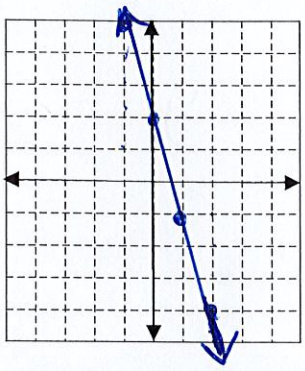


What is the slope of the equation? 2/1

What is the y – intercept ? -1

2. $y = -3x + 2$

x	$y = -3x + 2$	$f(x) = -3x + 2$	(x, y)
2	$y = -3(2) + 2$	$f(2) = -4$	(2, -4)
1	$y = -3(1) + 2$	$f(1) = -1$	(1, -1)
0	$y = -3(0) + 2$	$f(0) = 2$	(0, 2)
-1	$y = -3(-1) + 2$	$f(-1) = 5$	(-1, 5)

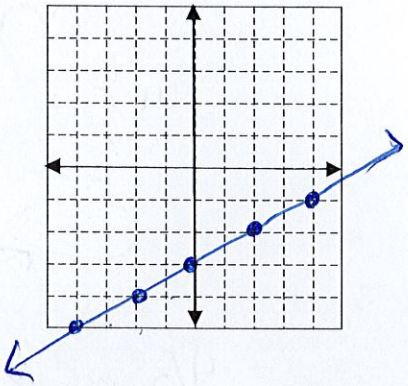


What is the slope of the equation? -3/1

What is the y – intercept ? 2

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

x	$y = \frac{1}{2}x - 3$	$f(x) = \frac{1}{2}x - 3$	(x, y)
2	$y = 1/2(2) - 3$	$f(2) = -2$	(2, -2)
0	$y = 1/2(0) - 3$	$f(0) = -3$	(0, -3)
-2	$y = 1/2(-2) - 3$	$f(-2) = -4$	(-2, -4)
-4	$y = 1/2(-4) - 3$	$f(-4) = -5$	(-4, -5)

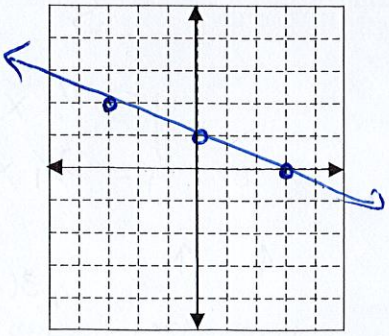


What is the slope of the equation? 1/2

What is the y – intercept ? -3

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

x	$y = -\frac{1}{3}x + 1$	$f(x) = -\frac{1}{3}x + 1$	(x, y)
3	$-1/3(3) + 1$	$f(3) = 0$	(3, 0)
0	$-1/3(0) + 1$	$f(0) = 1$	(0, 1)
-3	$-1/3(-3) + 1$	$f(-3) = 2$	(-3, 2)



What is the slope of the equation? -1/3

What is the y – intercept ? 1