MS Algebra: 2.6.4

Warm-up

Any ?s on HW: WS 2.6.3

Goal: I can identify properties of linear functions, including slopes and intercepts.

HW: Worksheet 2.6.4

Slope-Intercept Form → starting value

$$y = mx + b$$ ← y-intercept (where graph crosses y-axis)

↑ slope (rate of change)

Slope Intercept Form: **y=mx+b** where the slope is the number in place of "m" and the y-intercept is the number in place of "b".

Parallel Lines: have the __same slope__ and will never intersect.

SLOPE-INTERCEPT FORM OF THE EQUATION OF A LINE

The linear equation $y = mx + b$ is written in **slope-intercept form.**
The slope of the line is m.
The y-intercept is b.
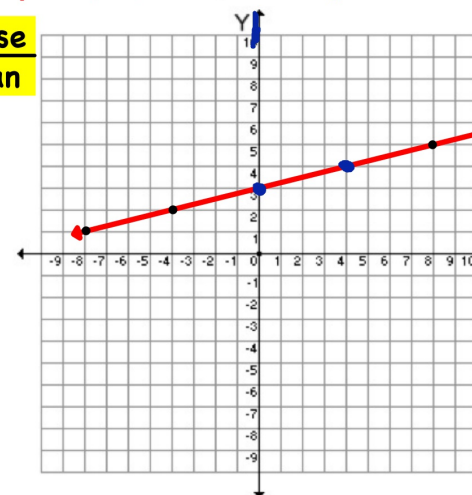
$y = 2x + 3$

Slope is 2.

y-intercept is 3.
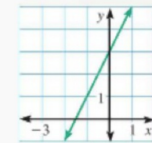
Equation	Slope (m)	y-intercept (b)
$y = 3x + 2$	$3 = \frac{3}{1}$	2
$y = \frac{-2}{3}x + 4$	$\frac{-2}{3}$	4
$y = \frac{1}{2}x + ^-5$	$\frac{1}{2}$	-5

Identify the equation of the line:

Slope (m) = $\frac{1}{4}$ y-intercept (b) = 3
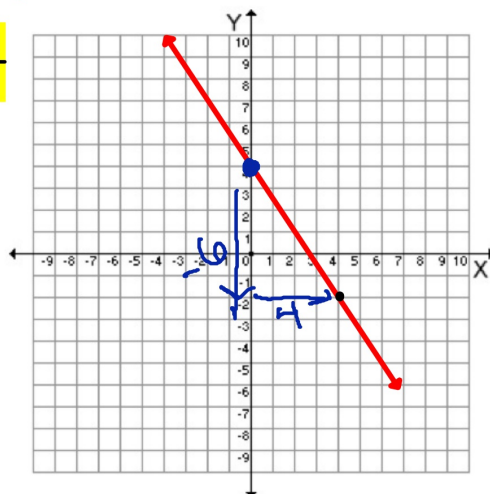
$\frac{Rise}{Run}$

Equation:

y = mx + b

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

Find the equation of the line:

Slope (m) $= \frac{-6}{4} = \frac{-3}{2}$ y-intercept (b) = 4
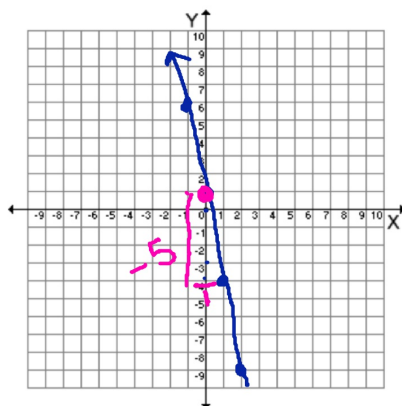
Rise
Run

Equation:

y = mx + b

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

Graphing a linear function using slope-intercept form.

1. Identify the slope **(m)**
2. Identify the **y-intercept (b)**
★3. Plot the **y-intercept** (starting value) **(where the line began)**
★4. Plot more points to show the **slope** **(how the line moves)**
5. Connect the points with a straight line (showing the line extends infinitely)
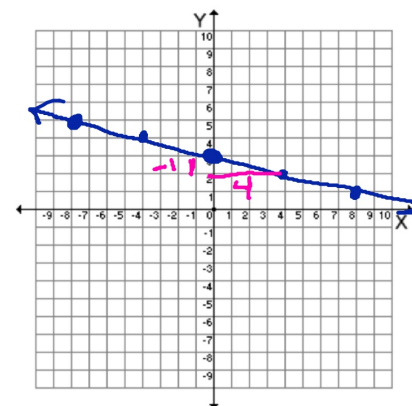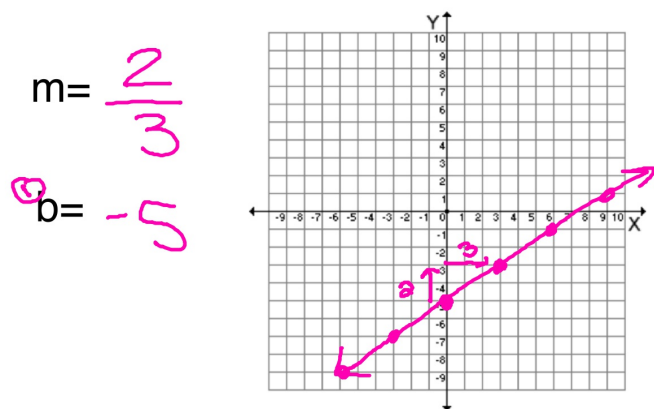
Graph y= -5x + 1

m= $\frac{-5}{1}$

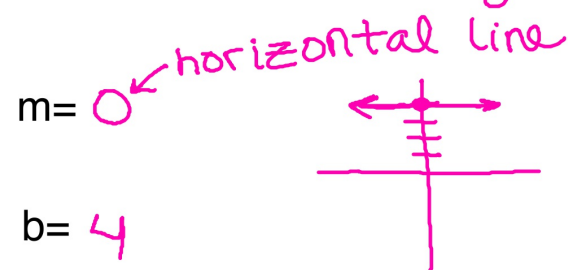b= 1

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

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

① b= 3

Graph $y = \frac{2}{3}x + 5$

m= $\dfrac{2}{3}$

b= -5

Graph $y = 4 \rightarrow y = 0x + 4$

horizontal line

m= 0 ← horizontal line

b= 4

Graph $x = -5$

No y in the equation – vertical line

m= undefined

b= NONE