Table of Contents:

Order of operations

○ I can evaluate expressions using order of operations

Groupings ( ) [ ]
Exponents x^2
Multiplication or Division (left to right)
Subtraction or addition (left to right)

Guided Practice

①
$$3^2 + (2+7) \div 3$$
$$3^2 + 9 \div 3$$
$$9 + 9 \div 3$$
$$9 + 3$$
$$\boxed{12}$$

$3 \cdot 3$
$2^{④}$
$2 \cdot 2 \cdot 2 \cdot 2$

G
E
M/O
S/A

②
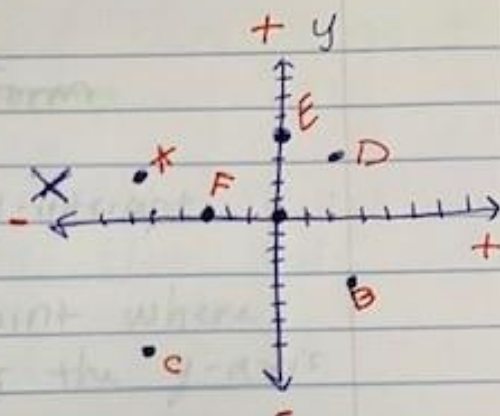$$4 \cdot 2 + 5^2 - 1$$
$$4 \cdot 2 + 25 - 1$$
$$8 + 25 - 1$$
$$33 - 1$$
$$\boxed{32}$$

$5 \cdot 5$

Plotting Points

(x, y)

① A x, y
$(-6, 2)$

② B x y
$(3, -4)$

③ C x y
$(-5, -7)$
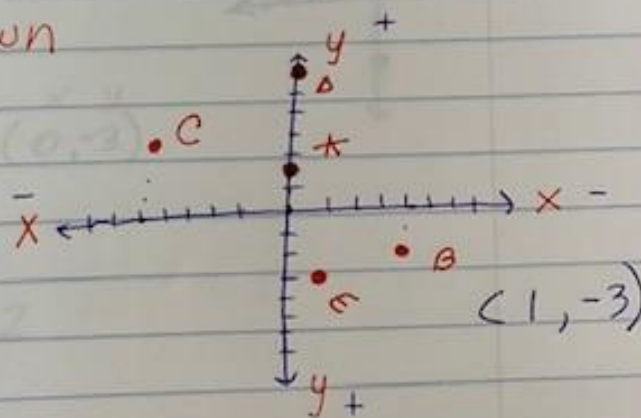
④ D x y
$(2, 3)$

⑤ E x y
$(0, 4)$

⑥ F x y
$(-3, 0)$

On your own

① x y
A $(0, 2)$

② B x y
$(4, -2)$

③ C $(-5, 3)$

④ D $(7, 0)$

$(1, -3)$

Slope Intercept Form

$$y = mx + b$$

slope $\uparrow$ y-intercept

y intercept (b) : point where your line crosses the y-axis.

Slope (m) : $\dfrac{rise}{run}$ $\updownarrow$ $\leftrightarrow$

Examples :

①
$$\overset{m}{y} = 2x \overset{b}{- 3}$$

slope : $\dfrac{2}{1}$

$\overset{x \; y}{}$ y intercept : $(0, -3)$

②
$$y = \overset{m}{\dfrac{1}{3}} x + 2$$
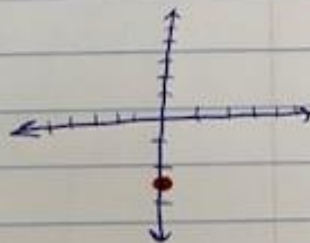
slope : $\dfrac{1}{3}$

$\overset{x \; y}{}$ y intercept : $(0, 2)$

Graphing $(y = mx + b)$

- I can graph an equation in slope intercept form.

① $y = \frac{1}{3x} + 4$

$\overset{m}{\text{Slope}}: \frac{1}{3}$ $\overset{b}{y}\text{int}\,(0, 4)$
$\underset{\text{run}}{\text{rise}}$ start
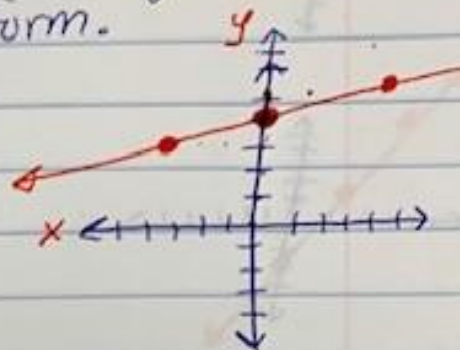
② $y = 5x - 2$

$\overset{m}{\text{Slope}}: \frac{5}{1}$ $\overset{b}{y}\text{int}\,(0, -2)$
$\underset{\text{run}}{\text{rise}}$ start
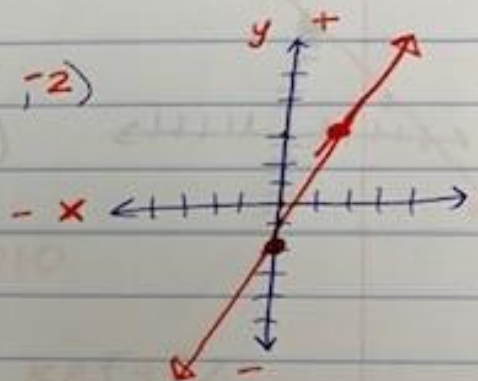
③

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

$\overset{m}{\text{Slope}}: -\frac{1}{2}$ $\overset{b}{y}\text{int}\,(0, 1)$
$\underset{\text{run}}{\text{rise}}$ start
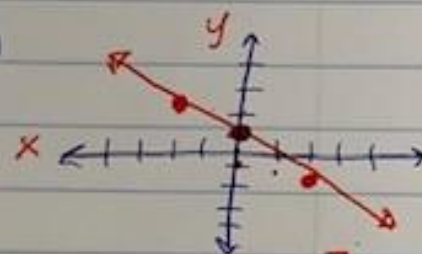
④

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

$\overset{m}{\text{Slope}}: \frac{4}{3}$ $\overset{b}{y}\text{int}\,(0, 5)$
$\underset{\text{run}}{\text{rise}}$ $\frac{-4}{}$ start
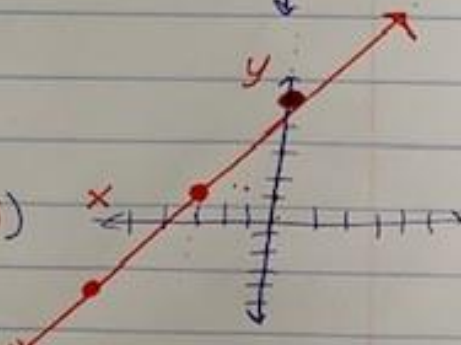
Standard form to Slope intercept form

- I Can change an equation from standard form to Slope intercept form.

Standard form: $Ax + By = C$
slope intercept form: $y = mx + b$

* use O-M-S to get Ax and B on the right side of the equal Sign *

Examples

① $Ax + By = c$ | $y = mx + b$
  $2x + 3y = 9$
  $-2x$ $\quad -2x$
  $\dfrac{3y}{3} = \dfrac{-2x}{3} + \dfrac{9}{3}$

  $\boxed{y = -\dfrac{2}{3}x + 3}$

③
  $-8x - y = 6$
  $+8x \qquad +8x$
  $\dfrac{-y}{-1} = \dfrac{8x}{-1} + \dfrac{6}{-1}$

  $\boxed{y = -8x - 6}$

② $x + 4y = 16$
  $-x \qquad -x$
  $\dfrac{4y}{4} = \dfrac{-x}{4} + \dfrac{16}{4}$

  $\boxed{y = -\dfrac{1}{4}x + 4}$

08/25 Exponent Rules

- I can evaluate expressions containing exponents.

Exponent Laws

$$X^a \cdot X^b = X^{a+b}$$

$$\frac{X^a}{X^b} = X^{a-b}$$

$$X^{-a} = \frac{1}{X^a}$$

$$X^0 = 1$$

$$(X^a)^b = X^{a \cdot b}$$

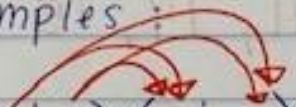$$\left(\frac{XY}{Z}\right)^a = \frac{X^a Y^a}{Z^a}$$

● I can simplify Polynomials

First
Outer
Inner
Last

Then, Combine like terms

Examples:

① $(x-3)(x+2)$

$x^2 + 2x - 3x - 6$

$x^2 - 1x - 6$

$x^2 - x - 6$

② $(5x-8)(2x-11)$

$10x^2 - 55x - 16x + 88$

$10x^2 - 71x + 88$

③ $(x+4)(2x+5)$

Box method

$x + 4$

	x	4
$2x$	$2x^2$	$8x$
5	$5x$	20

$2x^2 + 13x + 20$