

# Warm-up

Write equation for

①  $(1, 4), (6, -1)$

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

$$y - 4 = -1(x - 1)$$

$$y + 1 = -1(x - 6)$$

$$m = \frac{4 - (-1)}{1 - 6} = \frac{5}{-6} = -1$$

$$y = mx + b$$

$$4 = -1(1) + b$$

$$4 = -1 + b$$

$$5 = b$$

$$y = -1x + 5$$

## 5.4 Standard Form

Slope - Intercept:  $y = mx + b$   
 Slope =  $m$   $y$ -int =  $b$

Point - Slope:  $y - y_1 = m(x - x_1)$   
 Slope =  $m$  Point  $(x_1, y_1)$

Standard Form:  $Ax + By = C$   
 $x$  &  $y$  on same side  
 \* use S.I. or P.S. to write the equation  
 \* Then move stuff around

So...

$$2x - 4y = 10 \quad \swarrow \cdot 2$$

$$x - 2y = 5 \quad \swarrow \cdot 5$$

$$5x - 10y = 25 \quad \swarrow \cdot 5$$

} Equivalent equations  
 (are the same)

## Writing in Standard Form

①  $(4, -1), m = 3$

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

distribute 3

$$y + 1 = 3x - 12$$

$-3x$        $-3x$

$$-3x + y + 1 = -12$$

$-1$        $-1$

$$-3x + y = -13$$

1<sup>st</sup> - Write equation with P.S. or S.I. form.

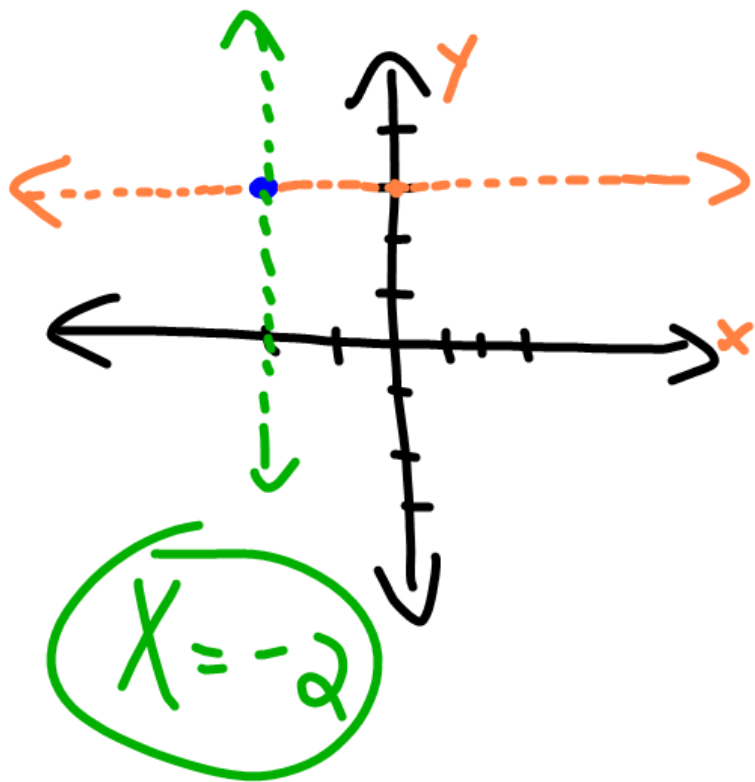
2<sup>nd</sup> - Move stuff around & get  $x$  &  $y$  on same side

# Horizontal & Vertical Lines

Write the equations for H & V lines thru

$P(-2, 3)$

1<sup>st</sup> - graph the pt.



Crosses y axis @ 3

So

$$Y = 3$$