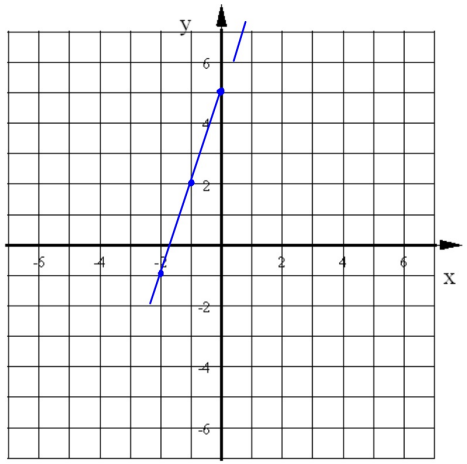
1. $y = 3x + 5$

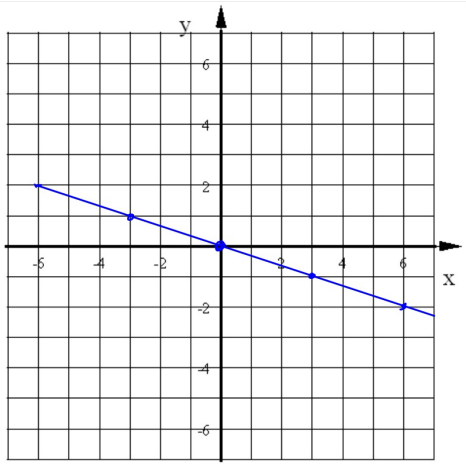
Slope-Intercept Form



2. $y = -\frac{1}{3}x$ +0

Slope-Intercept Form

y-intercept is zero



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

Point-Slope Form

change to $y = mx + b$

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

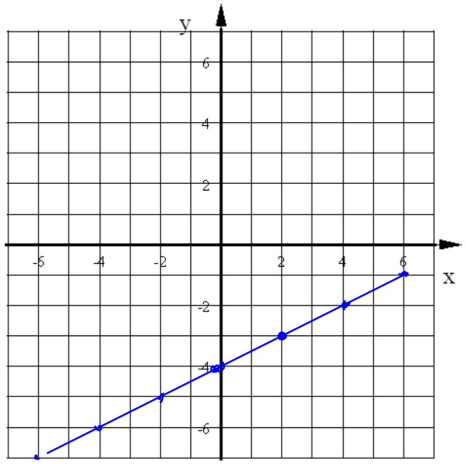
$-3 \quad -3$

$y = \frac{1}{2}x - 4$

Or turn equation back into slope and the point used to write the equation then plot the point and use the slope for more points.

$m = \frac{1}{2}$

$(2, -3)$



4. $y - 3 = 4(x + 5)$

Point-Slope Form

change to Slope-Intercept Form

$y - 3 = 4x + 20$

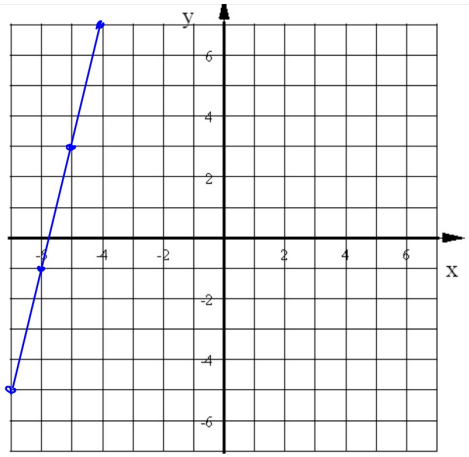
$+3 \quad +3$

$y = 4x + 23$

Or turn equation back into the slope and the point then plot the point and use slope for more points.

$m = 4$

$(-5, 3)$

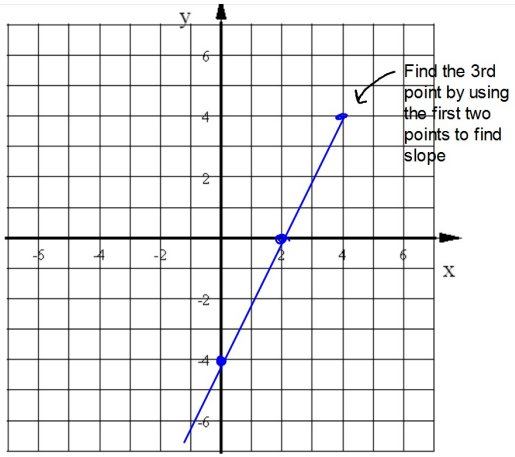


5. $18x - 9y = 36$

Standard Form

$x\text{-INT} = \frac{36}{18} = 2$

$y\text{-INT} = \frac{36}{-9} = -4$



6. $3x + 4y = 8$

Standard Form

Find intercepts: ~~$x\text{-int} = \frac{8}{3}$~~

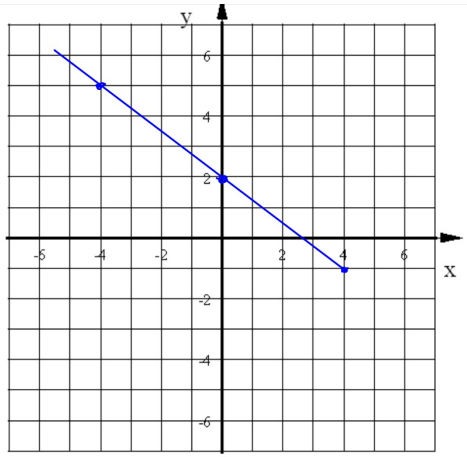
change to Slope-Intercept Form

$3x + 4y = 8$

$-3x \quad -3x$

$\frac{4y = 8 - 3x}{4}$

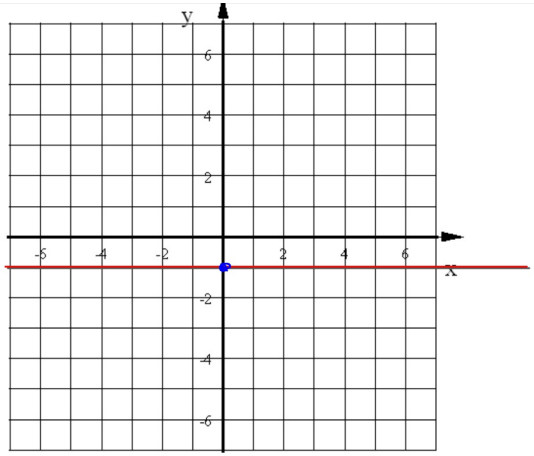
$y = 2 - \frac{3}{4}x$



7. $y = -1$

Horizontal Line

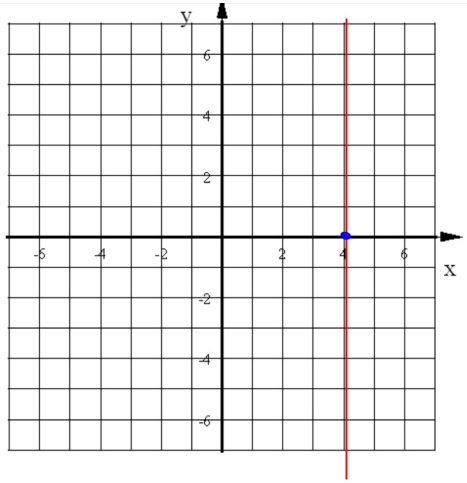
where y = -1



8. $x = 4$

Vertical Line

where x = 4

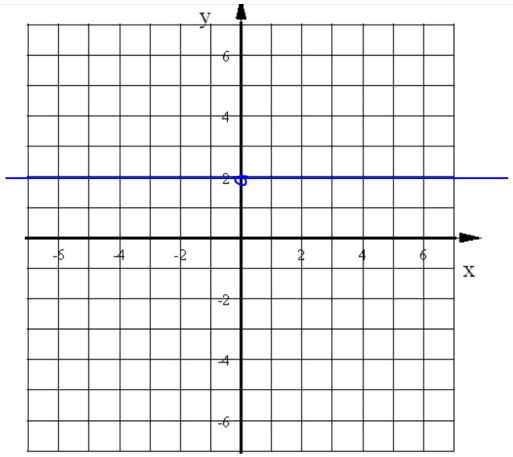


9. $7y = 14$

divide both sides by 7

y = 2

Horizontal Line



You can now do Hwk #28

Practice Sheet - graphing lines.

Due Thursday

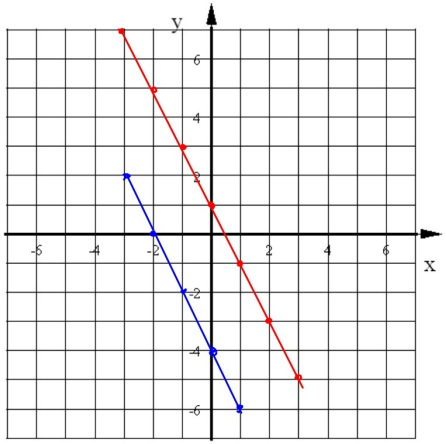
On the same set of axes graph these two lines:

y = -2x + 1

6x + 3y = -12

$y = \frac{-12-6x}{3}$

$y = -4x - 2x$



What is the relationship between the two lines you just graphed?

Parallel → Symbol ||

y = -2x + 1

Write this equation in Slope-Intercept Form

6x + 3y = -12

$y = -2x - 4$

What do you notice about the two equations?

How do you know by just looking at the equations of two lines if they are Parallel?

- Same Slope
- Different y-intercept

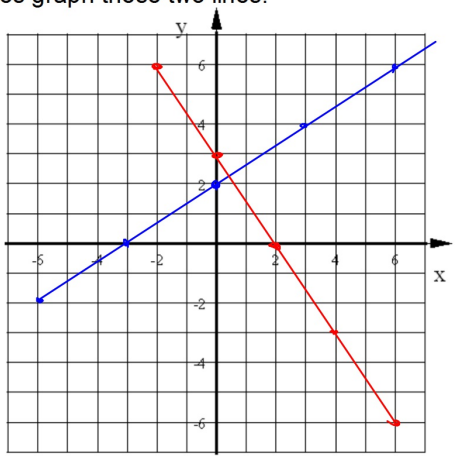
On the same set of axes graph these two lines:

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

$15x + 10y = 30$

x-int = 2

y-int = 3



What is the relationship between the two lines you just graphed?

Perpendicular → Symbol: ⊥

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

Write this equation in Slope-Intercept Form

$15x + 10y = 30$

$\frac{10y}{10} = \frac{30 - 15x}{10}$

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

What do you notice about the two equations?

How do you know by just looking at the equations of two lines if they are Perpendicular?

- Slopes are opposite reciprocals
- y-intercept doesn't matter!

Sec 6-5: Parallel and Perpendicular Lines

Two lines are Parallel if they:

- Have the same slope
- Different y-intercepts

Two lines are Perpendicular if they:

- Have opposite reciprocal slopes
- y-intercepts don't matter