Write the equation of the line that passes through this pair of points. Give your answer in Slope-Intercept Form

(4, 1) and (-7, 1)

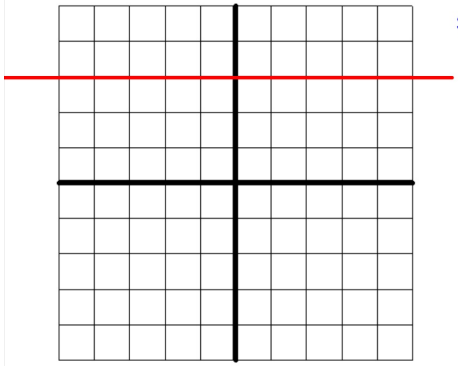
EQ: $y = 1$

m = Zero

$y - 1 = 0(x - 4)$

$y + 1 = 0 + 1$

EQ: $y = 3$



They all have the same y-coordinate

What is the slope? 0

What is the y-intercept? 3

What is the equation?

$y = 0x + 3$

$y = 3$

The equation of every horizontal line:

y = #

This number is the y-intercept or the y-coordinate of any point on the line.

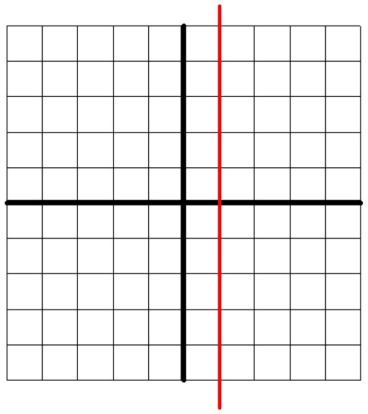
Write the equation of the line that passes through this pair of points.

(3, 5) and (3, -2)

EQ

$x = 3$

$m = \frac{}{0}$ = undefined



They all have the same x-coordinate

What is the slope? undefined

What is the y-intercept? NONE

What is the equation?

$x = 1$

The equation of every vertical line:

x = #

This number is the x-intercept or the x-coordinate of any point on the line.

Take a small white board, a dry-erase marker, and a rag

What is the equation of this line?

Passes through (32, -9) and (32, 47)

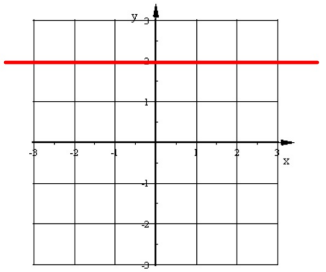
$x = 32$

What is the slope of this line?

Passes through (-8, -4) and (11, -4)

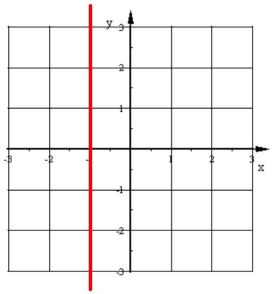
$m = 0$

What is the equation of this line?



$y = 2$

What is the equation of this line?



$x = -1$

What is the slope of this line?

Passes through (3, 6) and (3, 4)

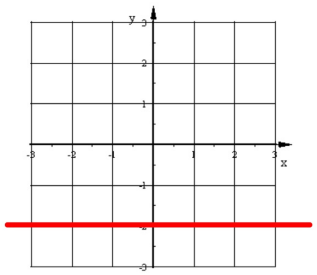
undefined

What is the equation of this line?

Passes through (2, 9) and (-2, 9)

$y = 9$

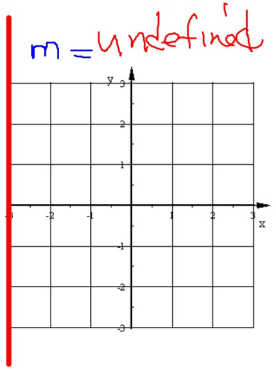
What is the slope of this line?



$m = 0$

What is the slope of this line?

$m =$ undefined



Equations of Lines:

Slope-Intercept Form: $y = mx + b$

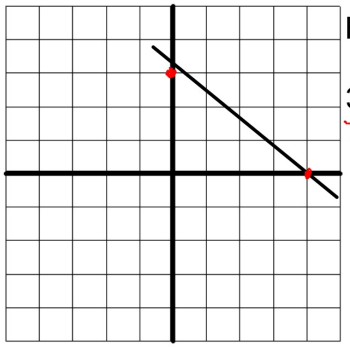
Standard Form: Sec 6-3 $Ax + By = C$

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

Horizontal Lines: $y = \#$

Vertical Lines: $x = \#$

Method 1: rewrite the equation into Slope-Intercept Form



How would you graph the equation:

$3x + 4y = 12$ $-3x$

$-3x$

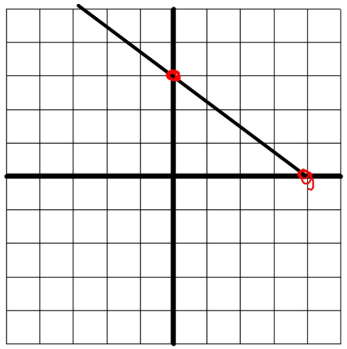
$\frac{4y}{4} = \frac{12 - 3x}{4}$

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

How would you graph the equation:

$3x + 4y = 12$

Method 2: find the x and y intercepts then connect them.



To find y-intercept:
Replace x with zero and solve for y

$4y = 12$

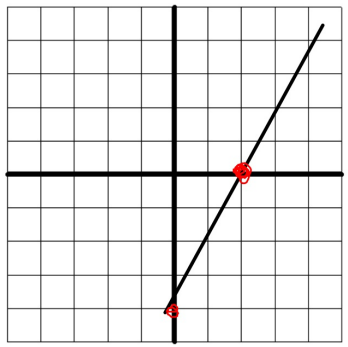
$y = 3$

To find x-intercept:
Replace y with zero and solve for x

$3x = 12$

$x = 4$

Graph $8x - 4y = 16$ by finding the intercepts.



x-int = 2

y-int = -4

Hwk #10 Sec 6-3

Use the paper I've printed for you.

Pages 301 - 302

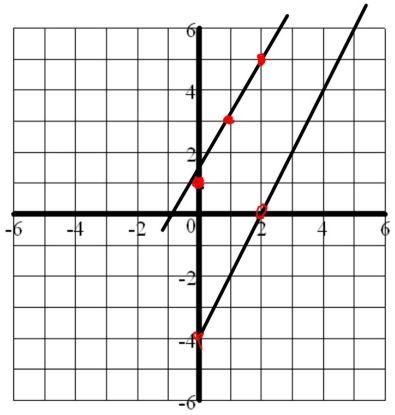
Problems: 5, 6, 15, 16, 18, 21, 22, 25, 26, 36, 58, 61

Due Friday

Graph the following two lines on the same graph.

$y = 2x + 1$

$6x - 3y = 12$



X-int = 2

Y-int = -4

$6x - 3y = 12$ $-6x$ $-6x$

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

$y = -4 + 2x$

Lines are Parallel.

Sec 6-5: Parallel and Perpendicular Lines

2 lines are Parallel if they have:

- The same slope, but
- Different y-intecepts