

Cornell Notes

Name: _____

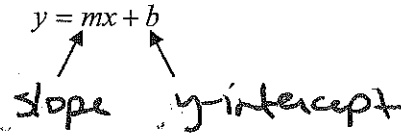
Date: _____

Main Ideas/Questions

Title of Notes: **Slope Intercept Form & Standard Form**

Slope - Intercept Form of a Linear Equation

The slope-intercept form of a linear equation is $y = mx + b$



The y-intercept is the point where a line crosses the y-axis

Ex1. Give the slope and y-intercept for each

a) $y = 3x - 5$ $m = 3$ $b = -5$ The point where the line crosses the y-axis is $(0, -5)$

b) $y = \frac{8x - 2}{2}$ $m = 4$ $b = -1$

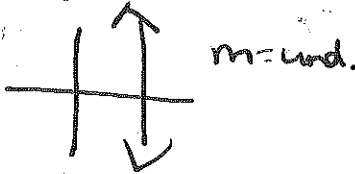
c) $y + 7 = 2x$ $m = 2$ $b = -7$

d) $4x - 2y = 6$ $m = 2$ $b = -3$

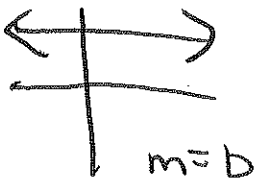
$\frac{4x}{2} - \frac{2y}{2} = \frac{6}{2}$ $y = 2x - 3$

point-slope formula
 $y - y_1 = m(x - x_1)$

$x = \#$; vertical line



$y = \#$; horizontal line

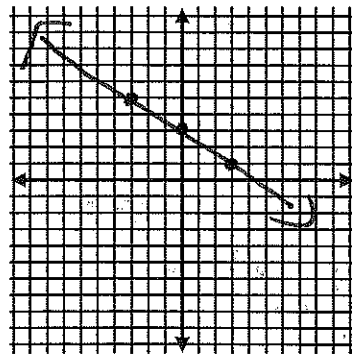


Steps to Graph a line using slope-intercept form

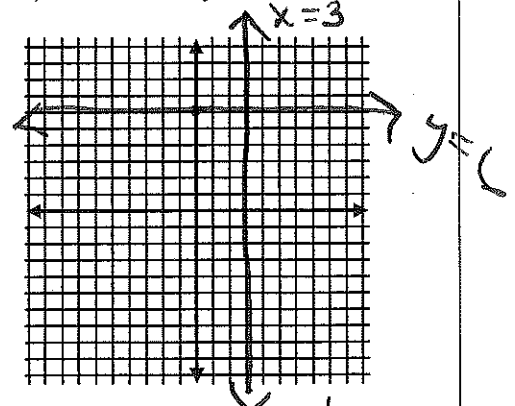
- 1st Graph the y-intercept
- 2nd Use the slope (rise/run) the graph additional points
- 3rd Draw a line through your points

Ex2. Graph each line

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



b) $x = 3$ and $y = 6$



These two lines are perpendicular

Cornell Notes

Title of Notes: **Cont'd**

Main Ideas/Questions

Standard Form of a Linear Equation

Standard form is $Ax + By = C$

Where A, B, and C are real #'s, and A & B are not zero. *no fractions*

Ex 4. Give the A, B, and C for $6x - 3y = 12$

A = 6 B = -3 C = 12

A is positive

I. Finding the Slope when in Standard Form

Use the formula $m = \frac{-A}{B}$ when in standard form to find the slope

Ex.5 Find the slope for the following.

a) $2x + 4y = -4$

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

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

b) $3x + 2y = 1$

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

$m = -\frac{3}{2}$

c) $6x - 3y = 12$

$-3y = -6x + 12$
 $y = 2x - 4$

$m = 2$

Graphing in Standard Form

There is 2 ways to graph in Standard Form

1. **Make a quick graph** using the x and y-intercept.

- Only use a quick graph if the x and y-intercepts are nice whole numbers.
- **X-intercept** is the x-coordinate of the point where a line crosses the x-axis. $\therefore y = 0$
- **Y-intercept** is the y coordinate of the point where a line crosses the y-axis. $\therefore x = 0$

2. **Change Standard form into Slope-intercept form**

$(y = mx + b)$

If equation is in standard, just graph the intercepts

Ex. 6 Make a quick graph of $6x - 3y = 12$

x-Intercept $(2, 0)$ $y = 0$

$\therefore 6x - 3(0) = 12$
 $6x = 12$
 $x = 2$

y-Intercept $(0, -4)$ $x = 0$

$\therefore 6(0) - 3y = 12$
 $-3y = 12$
 $y = -4$

