

Warm-up) Given $A(2, 8)$ and $B(-5, -3)$
determine the equation of the line in Standard Form.
Thank Joel

8.3) More Point-slope Form May 12, 2016

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50. $(0, 1)$ $(-1, -1)$ are points on the graph

$$m = \frac{-1-1}{-1-0} = \frac{-2}{-1} = 2$$

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

$$y - 1 = 2(x - 0)$$

$$\boxed{y - 1} = 2x$$

$$0 = 2x - y + 1$$

54. $m = 0$ because horizontal

$$y = -3$$

$$\therefore y + 3 = 0$$

55. $m = \text{undefined}$ because vertical.

$$x = 2$$

$$\therefore x - 2 = 0$$

56. - draw the line of best fit
- what's the equation?

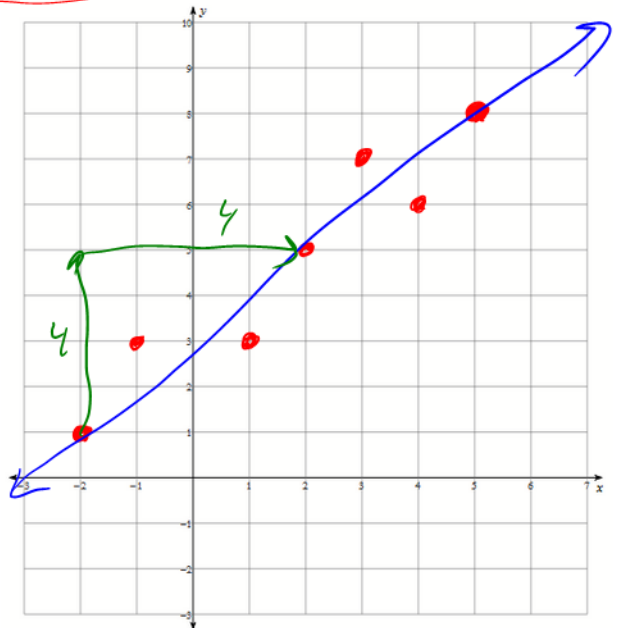
$$m = \frac{4}{4} = 1 \quad (-2, 1)$$

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

$$y - 1 = 1(x + 2)$$

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

$$0 = x - y + 3$$



8.4] Slope and y-intercept Form

The slope and y-intercept form is:

$$y = \underbrace{mx}_{\text{slope}} + \underbrace{b}_{\text{y-intercept}}$$

→ y must be positive and all alone.

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Find the slope and y-intercept →



1. $y = 3x + 1$

$$m = 3$$

$$y\text{-int} = 1$$

$$(0, 1)$$

3. $y = -4x + 3$

$$m = -4$$

$$y\text{-int} = 3$$

$$(0, 3)$$

6. $y + 4 = 5x$

$$y = 5x - 4$$

$$m = 5$$

$$y\text{-int} = -4$$

$$(0, -4)$$

7. $y - 2x = 0$

$$y = 2x$$

$$m = 2$$

$$y\text{-int} = 0$$

$$(0, 0)$$

9. $4x + 2y = 3$

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

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

$$m = -2$$

$$y\text{-int} = \frac{3}{2}$$

11. $3x + 2y + 6 = 0$

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

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

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

$$y\text{-int} = -3$$

$$13. \quad x \overset{+3x}{\boxed{-3y}} - 9 = 0 \overset{+3y}{}$$

$$\frac{1x}{3} - \frac{9}{3} = \frac{3y}{3}$$

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

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

$$m = \frac{1}{3}, y\text{-int} = -3$$

19. Determine $y = mx + b$

$(1, 3)$ and $(3, 5)$

$$(1) \quad m = \frac{5-3}{3-1} = \frac{2}{2} = 1$$

$$(2) \quad y - y_1 = m(x - x_1)$$

$$y - 5 = 1(x - 3)$$

$$y \overset{+5}{-5} = x \overset{+5}{-3}$$

$$y = x + 2$$

← from here, go to Standard
or $y = mx + b$.

22. $(-1, -2)$ and $(-5, -10)$

$$m = \frac{-10 + 2}{-5 + 1} = \frac{-8}{-4} = 2$$

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

$$y + 10 = 2(x + 5)$$

$$y \overset{-10}{+10} = 2x + 10 \overset{-10}{-10}$$

$$y = 2x$$

23. Let's create both forms!!

$$(2, 1) \text{ and } (6, 4)$$

$$m = \frac{4-1}{6-2} = \frac{3}{4}$$

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

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

$$4y - 16 = 3x - 18$$

$$0 = 3x - 4y - 2$$

Standard!

$$4y - 16 = 3x - 18$$

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

$$y = \frac{3}{4}x - \frac{1}{2}$$

26 on the board.

$$(4, -5) \text{ and } (-2, 3)$$

$$m = \frac{3+5}{-2-4} = \frac{8}{-6} = -\frac{4}{3}$$

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

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

$$3y - 9 = -4x - 8$$

$$4x + 3y - 1 = 0$$

Hw: pg 419 # 51, 52, 57
pg 428 # 2-24

$$3y - 9 = -4x - 8$$

$$\frac{3y}{3} = \frac{-4x}{3} + \frac{1}{3}$$

$$y = -\frac{4}{3}x + \frac{1}{3}$$