

ELEMENTARY ALGEBRA

UNIT 18 - SLOPE

18.4 - SOLVE FOR "Y"

Solve for "y" ($y = mx + b$), then find slope (m) & y-intercept (b):

*1. $3x - 5y = 5$

$$\begin{array}{r} 3x - 5y = 5 \\ -3x = -3x \end{array} \left\{ \begin{array}{l} \text{First, subtract} \\ \text{"3x"} \text{ from both} \\ \text{sides of the "="} \end{array} \right.$$

$$-5y = -3x + 5$$

$$\begin{array}{r} -5y = -3x + 5 \\ -5 \end{array} \left\{ \begin{array}{l} \text{Then, divide} \\ \text{everything} \\ \text{by "-5."} \end{array} \right.$$

$$y = \frac{3}{5}x - 1$$

$$m = \left(\frac{3}{5}\right), b = (-1)$$

*2. $3y - 5x = 12$

$$\begin{array}{r} 3y - 5x = 12 \\ + 5x = 5x \end{array} \left\{ \begin{array}{l} \text{First, add} \\ \text{"5x"} \text{ to both} \\ \text{sides of "="} \end{array} \right.$$

$$3y = 5x + 12$$

$$\begin{array}{r} 3y = 5x + 12 \\ 3 \end{array} \left\{ \begin{array}{l} \text{Then, divide} \\ \text{everything} \\ \text{by "3."} \end{array} \right.$$

$$y = \frac{5}{3}x + 4$$

$$m = \left(\frac{5}{3}\right), b = (4)$$

*3. $2x + 4y = -8$

$$4y = -2x - 8$$

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

$$m = \left(-\frac{1}{2}\right), b = (-2)$$

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Solve for "y" ($y = mx + b$), then find slope (m) & y-intercept (b):

4. $3x - 2y = 2$

5. $y - 3x = -1$

6. $-5x - 3y = -6$

7. $4x + 3y = 6$

8. $6x - 3y = -9$

9. $x - 2y = 10$

10. $5y + x = -5$

11. $3x = 3y - 3$

*1.

$$4. \quad m = \frac{3}{2}$$
$$b = -1$$

$$5. \quad m = 3$$
$$b = -1$$

$$6. \quad m = \frac{-5}{3}$$
$$b = 2$$

$$7. \quad m = \frac{-4}{3}$$
$$b = 2$$

$$8. \quad m = 2$$
$$b = 3$$

$$9. \quad m = \frac{1}{2}$$
$$b = -5$$

$$10. \quad m = \frac{-1}{5}$$
$$b = -1$$

*3.

$$11. \quad m = 1$$
$$b = 1$$