Key

Aim: To re-write linear equations in y = mx + b form (8.EE.6)

Rewriting Equations in Slope-Intercept Form

The equation of a line written in the form **y = mx + b** is said to be in **slope-intercept form**. To write an equation in slope-intercept form, you need to **isolate y** by using the properties of equality.

Example:

Rewrite the equation 4x - 2y = 12 in slope-intercept form.

$$4x - 2y = 12$$
$$-4x \qquad -4x$$
$$\frac{-2y}{-2} = \frac{-4x}{-2} + \frac{12}{-2}$$
$$y = 2x - 6$$

1. Subtract 4x from each side to isolate y.
2. Simplify.
3. Divide each term by -2 to get y by itself.
4. Simplify.

Rewrite each of the following equations in **y = mx + b** form. Show each step!

1) $x + y = -15$

$y = -x - 15$

2) $2y + 8x = 1$

$\frac{2y}{2} = \frac{-8x}{2} + \frac{1}{2}$

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

3) $-2x + y = 1$

$y = 2x + 1$

4) $3y - 2x = 9$

$\frac{3y}{3} = \frac{2x}{3} + \frac{9}{3}$

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

5) $2y = \frac{-1x}{2} - \frac{8}{2}$

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

6) $y - 4 = -3(x - 3)$

$y - 4 = -3x + 9$

$y = -3x + 13$

Algebra 1

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Slope intercept form practice

Date_____ Period____

Solve for y

1) $x + y = 3$

$y = -x + 3$

2) $x - y = 5$

$-y = -x + 5$

$y = x - 5$

3) $7x + 5y = -20$

$\frac{5y}{5} = \frac{-7x}{5} - \frac{20}{5}$

$y = -\frac{7}{5}x - 4$

4) $5x - 4y = 20$

$\frac{-4y}{-4} = \frac{-5x}{-4} + \frac{20}{-4}$

$y = \frac{5}{4}x - 5$

5) $3x + 4y = -12$

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

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

6) $3x - 2y = -4$

$-3x \quad -3x$

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

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

7) $7x - 3y = -9$

$\frac{-3y}{-3} = \frac{-7x}{-3} - \frac{9}{-3}$

$y = \frac{7}{3}x + 3$

8) $x - 5y = 15$

$\frac{-5y}{-5} = \frac{-x}{-5} + \frac{15}{-5}$

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

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Rewriting Equations in Slope-Intercept Form Homework

Rewrite each of the following equations in slope-intercept form: $y = mx + b$.

1) $8x - 4y = 20$

$\frac{-4y}{-4} = \frac{-8x}{-4} + \frac{20}{-4}$

$y = 2x - 5$

2) $2x + 3y = 12$

$\frac{3y}{3} = \frac{-2x}{3} + \frac{12}{3}$

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

3) $2x + y = -11$

$y = -2x - 11$

4) $0.8x + 0.4y = 1.2$

$\frac{0.4y}{0.4} = \frac{-0.8x}{0.4} + \frac{1.2}{0.4}$

$y = -2x + 3$

5) $3y = 4x - 27$

$\frac{3y}{3} = \frac{4x}{3} - \frac{27}{3}$

$y = \frac{4}{3}x - 9$

6) $x - 4y = 8$

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

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

7) $y + 9 = 2(x + 5)$

$y + 9 = 2x + 10$

$-9 \quad -9$

$y = 2x + 1$

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

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

$+1 \quad +1$

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