

Turn in HW 2!



Learning Target: -I can solve multi-step equations.
-I can identify the properties used in solving an equation.

Solve each equation.

1.) $\frac{x-3}{5} + \frac{x+2}{10} = 5$

$$\frac{(x-3) \cdot 2}{5 \cdot 2} + \frac{x+2 \cdot 1}{10 \cdot 1} = 5 \cdot 2$$

$$2x - 6 + x + 2 = 50$$

$$3x - 4 = 50$$

$$\begin{array}{r|l} +4 & +4 \\ \hline 3x & 54 \end{array}$$

$$\frac{3x}{3} = \frac{54}{3} \quad \boxed{x=18}$$

2.) $\frac{x+2}{x-3} = \frac{8}{9}$

$$9(x+2) = 8(x-3)$$

$$\begin{array}{r|l} 9x+18 & 8x-24 \\ -18 & -18 \\ \hline 9x & 8x-42 \end{array}$$

$$\begin{array}{r|l} 9x & 8x-42 \\ -8x & -8x \\ \hline x & -42 \end{array}$$

$$\boxed{x = -42}$$

3.) The work below shows Joseph's work for solving the equation $5(x + 1) = 35$. State each property that Joseph used for each step of his work.

$$5(x + 1) = 35$$

$$5x - 5 = 35$$

$$\begin{array}{r} +5 \\ +5 \end{array}$$

$$\frac{5x}{5} = \frac{40}{5}$$

$$x = 8$$

~~Distributive Property~~
~~Addition Property of Equality~~
~~Division Property of Equality~~

4.) Which equation illustrates the associative property?

Commutative

(a) $ab = ba$

(c) $a \cdot 1 = a$

(b) $a(bc) = (ab)c$

(d) $a(b+c) = ab+ac$

Distributive *

5.) Solve for x: $ax + c = 2b$

$$\frac{ax + c}{c} = \frac{2b}{c}$$

$$\frac{ax}{c} = \frac{2b - c}{c}$$

$$x = \frac{2b - c}{a}$$

6.) Solve for a: $\frac{a-z}{y} = (3x)y$

$$\frac{a-z}{+z} = \frac{3xy}{+z}$$

$$a = 3xy + z$$

7.) State the property used in each step of solving the equation below.

$$3(x-1) + 4(x+2) = 19$$

$$3x - 3 + 4x + 8 = 19$$

$$3x + 4x - 3 + 8 = 19$$

$$7x + 5 = 19$$

$$-5 \quad -5$$

$$\frac{7x}{7} = \frac{14}{7}$$

$$x = 2$$

Distributive Property
Commutative Property
Subtraction Property
Equality
Division " "

8.) $\frac{x}{x+10} = \frac{3}{5}$

$$3(x+10) = 5x$$

$$3x + 30 = 5x$$

$$-3x \quad -3x$$

$$\frac{30}{2} = \frac{2x}{2}$$

$$15 = x$$

9.) $\frac{x}{3} + \frac{1}{5} = \frac{x}{5} - 1$

$$\frac{x}{3} \cdot \frac{5}{5} + \frac{1}{5} \cdot \frac{3}{3} = \frac{x}{5} \cdot \frac{3}{3} - 1 \cdot 15$$

$$\frac{5x + 3}{-3x} = \frac{3x - 15}{-3x}$$

$$\frac{2x + 3}{73} = \frac{-15}{-3}$$

$$\frac{2x}{2} = \frac{-18}{2}$$

$$x = -9$$

$$(2x-3)(x^2+4x-5)$$

$$1x^2 + 4x^1 - 5$$

$2x^1$	$2x^3$	$+8x^2$	$-10x$
-3	$-3x^2$	$-12x$	$+15$

$$2x^3 + 5x^2 - 22x + 15$$