

Name:

Period:

PreAlgebra QUIZ: Building the Equation & Creating the Story of x

Rewrite the following expressions with an equivalent expression where x is as close as possible to the front:

1. $-3 + 4x = 4x - 3$

2. $-4 - 3x = -3x - 4$

3. $-2 - \frac{4+x}{5} = \frac{x+4}{-5} - 2$

4. $7 - 6(9 + x) = -6(x+9) + 7$

Build the equation (show all steps), identify the property used, and then create the story of x :

5. Truth Statement: $x = -14$ subtract 4, then divide by 3

Apply the Property of
Subtraction

Apply the Property of
Division

$$x = -14$$

$$x - 4 = -14 - 4$$

$$x - 4 = -18$$

$$\frac{x-4}{3} = \frac{-18}{3}$$

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

Equation and Story of x

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

- (1) Subtract 4 from x .
- (2) Divide the difference by 3.
- (3) The solution is -6 when $x = -14$.

6. Truth Statement: $x = 5$ add 8, then multiply by -4

Apply the Property of
Addition

Apply the Property of
Multiplication

$$x = 5$$

$$x + 8 = 5 + 8$$

$$x + 8 = 13$$

$$-4(x+8) = -4(13)$$

$$-4(x+8) = -52$$

Equation and Story of x

$$-4(x+8) = -52$$

- (1) Add 8 to x .
- (2) Multiply the sum by -4 .
- (3) The solution is -52 when $x = 5$.

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7. Truth Statement: $x = \frac{1}{2}$ subtract $\frac{3}{8}$, then multiply by $-\frac{5}{7}$ Equation and Story of x

$$-\frac{5}{7}(x - \frac{3}{8}) = -\frac{5}{56}$$

- (1) Subtract $\frac{3}{8}$ from x .
- (2) Multiply the difference by $-\frac{5}{7}$.
- (3) The solution is $-\frac{5}{56}$ when $x = \frac{1}{2}$.

Apply the Property of

Subtraction

Apply the Property of

Multiplication

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

$$x - \frac{3}{8} = \frac{1}{2} - \frac{3}{8}$$

$$x - \frac{3}{8} = \frac{1}{8}$$

$$-\frac{5}{7}(x - \frac{3}{8}) = -\frac{5}{7}(\frac{1}{8})$$

$$-\frac{5}{7}(x - \frac{3}{8}) = -\frac{5}{56}$$

8. Truth Statement: $x = -\frac{2}{3}$ multiply by $\frac{3}{7}$, then subtract $\frac{6}{11}$ Equation and Story of x

$$\frac{3}{7}x - \frac{6}{11} = -\frac{20}{77} \quad -\frac{64}{77}$$

- (1) Multiply $\frac{3}{7}$ by x .
- (2) Subtract $\frac{6}{11}$ from the product $-\frac{64}{77}$.
- (3) The solution is $-\frac{20}{77}$ when $x = -\frac{2}{3}$.

Apply the Property of

Multiplication

Apply the Property of

Subtraction

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

$$\frac{3}{7}x = \frac{3}{7}(-\frac{2}{3})$$

$$\frac{3}{7}x = -\frac{2}{7}$$

$$\frac{3}{7}x - \frac{6}{11} = -\frac{2}{7} - \frac{6}{11}$$

$$\frac{3}{7}x - \frac{6}{11} = -\frac{20}{77} - \frac{64}{77}$$

9. Truth Statement: $x = 3.5$ multiply by 5.6, then subtract 1.2Equation and Story of x

$$5.6x - 1.2 = 18.4$$

- (1) Multiply 5.6 and x .
- (2) Subtract 1.2 from the product.
- (3) The solution is 18.4 when $x = 3.5$.

Apply the Property of

Multiplication

Apply the Property of

Subtraction

$$x = 3.5$$

$$5.6x = 3.5(5.6)$$

$$5.6x = 19.6$$

$$5.6x - 1.2 = 19.6 - 1.2$$

$$5.6x - 1.2 = 18.4$$