Warm-up

Nov 12

1. Write an expression for the following statements

　(a) The quotient of a number divided by 2　$\dfrac{n}{2}$

　(b) The sum of a number and 10　$a + 10$

2. Solve the expression when x = 4

　(a) 9x

　$9(4)$

　36

3. Combine like terms: 3a + 4c - a + 11c + 5a

　$7a + 15c$

$$x^{\times 4} = 3^{\times 4}$$

what if I multiply both sides by 4?

$$4x = 12$$

Preservation of equality
- Whatever I do to one side of the equal sign, I have to do to the other

.IMPORTANT

$7 + 4 = 4 + 7$

$x = 9$

$3x = 27$

What if I multiply one side by 3?

$3x = 9 \quad ^{\times 3}$

$3x = 27$

$10x = 50$

What if I divide 10x by 10?

$$\frac{\cancel{10}x}{10} = \frac{50}{10}$$

$$x = 5$$

x = 5

We just solved for x....

- If the variable is multiplied by a number, divide both sides by that number to isolate the variable.

- If the variable is divided by a number, multiply both sides by that number.

- We use OPPOSITE operations to isolate the variable (get the variable alone)

Example:

1. $3x = 15$

$$\frac{3x}{3} = \frac{15}{3}$$

- get rid of the 3 by dividing
- whatever you do to one side, you do to the other

$$x = 5$$

- the 3's cancel out on the right
- $15 \div 3 = 5$ on the left

2. $\dfrac{x^{\times 4}}{4} = 7^{\times 4}$ How would I get my x alone?

$x = 28$

- **Use Inverse Operations:** Multiplication and division are inverse operations. Use these to move terms across the equals sign.

- **Keep Balance:** Always perform the same operation on both sides of the equation to maintain equality.

- **Work Step-by-Step:** Solve one operation at a time

Lets solve for x together

1. $\dfrac{6x}{6} = \dfrac{36}{6}$

   $x = 6$

2. $\dfrac{x}{5} = 4 \times 5$

   $x = 20$

1) $\dfrac{4x}{4} = \dfrac{12}{4}$

$x = 3$

2) $\dfrac{x}{3}^{\times 3} = 7^{\times 3}$

$x = 21$

3) $\dfrac{5x}{5} = \dfrac{90}{5}$

$x = 18$

4) $\dfrac{7x}{7} = \dfrac{49}{7}$

$x = 7$

5) $\dfrac{x}{2}^{\times 2} = 10^{\times 2}$

$x = 20$

Homework