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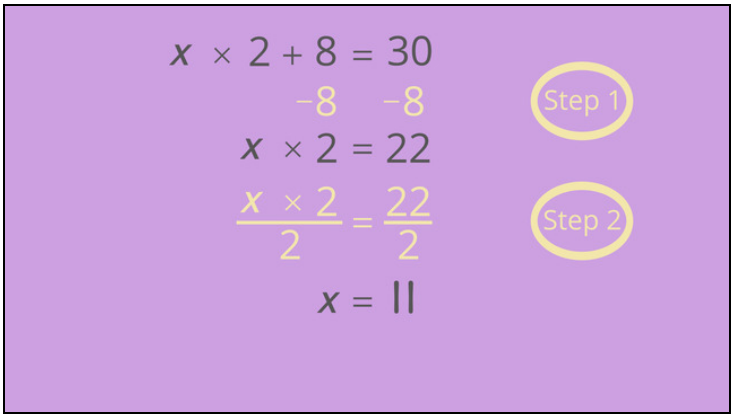
Solving Two-Step Equations



1 **Describe how to solve two-step equations.**

2 Determine the equation describing the situation.

3 Solve the equation.

4 Determine how many photos Shannon and her friends can take.

5 Solve the following equations.

6 Set up an equation to model the situation.

\+ with lots of tips, answer keys, and detailed answer explanations for all of the problems.

Describe how to solve two-step equations.

Choose the correct statements.

- [ ] A. To solve two-step equations, you have to isolate the variable.
- [ ] B. When solving two-step equations, the first step is always multiplication.
- [ ] C. First, you have to use the Distributive Property.
- [ ] D. In two step equations, after you combine like terms you use opposite operations.
- [ ] E. The opposite operation of addition is division.

Hints for solving these problems

1 of 6

Describe how to solve two-step equations.

Hint #1

Use **Opposite Operations**:

- **M**ultiplication ($\times \longleftrightarrow \div$)
- **D**ivision ($\div \longleftrightarrow \times$)
- **A**ddition ($+ \longleftrightarrow -$)
- **S**ubtraction ($- \longleftrightarrow +$)

Answers and detailed answer explanations for these problems

1 of 6

Describe how to solve two-step equations.

Answer key: A, D

To solve algebraic equations, you must isolate the variable by using **Opposite Operations**.

For solving two-step equations, you have to use **Opposite Operations** twice. First use **Opposite Operations** to remove the constant then again to remove the coefficient to the variable.

Use **Opposite Operations**:

- **M**ultiplication ($\times \longleftrightarrow \div$)
- **D**ivision ($\div \longleftrightarrow \times$)
- **A**ddition ($+ \longleftrightarrow -$)
- **S**ubtraction ($- \longleftrightarrow +$)

Let's have a look at the following equation:

$3 \times x - 4 = 8$.

Step 1

- Since we have -4 on the left side of the equation, we should **add** 4 on both sides of the equation to get $3 \times x = 12$.

Step 2

- In order to isolate the variable x, we use the **Opposite Operation** of multiplication, which is division. So we **divide** by 3 on both sides of the equation to get $x = 4$.