Printable Worksheets from sofatutor.com

Solving Multi-Step Equations with Variables on One Side

1 **Describe how to solve an equation.**

2 Solve the equation.

3 Evaluate how many times Kayla and Sam can ride the roller coaster.

4 Determine how many bags of candy Kayla and Sam can buy.

5 Find and solve the equation for the given situation.

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

⚠ The complete package, **including all problems, hints, answers, and detailed answer explanations** is available for all sofatutor.com subscribers.

Worksheet: Solving Multi-Step Equations with Variables on One Side
Mathematics / Algebra 1 / Equations / Solving Multi-Step Equations with Variables on One Side

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Describe how to solve an equation.

Chose the correct statements.

A

☐ We can only combine like terms.

B

☐ We can combine like terms on one or on both sides of the equation.

C

☐ We isolate the variable by using PEMDAS.

D

☐ We isolate the variable by using opposite operations.

E

☐ The opposite operation of $+$ is $+$.

F

☐ If we add, subtract, multiply, or divide on one side of the equation, we must also do so on the other side of the equation.

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Hints for solving these problems

1 of 5 Describe how to solve an equation.

Hint #1

Imagine an equation to be like a scale in balance:

- You can move things on one or both sides of the scale but if you remove something from one side of the scale, you have to remove the same something on the other side as well.

Hint #2

For example

$$
\begin{array}{rcl}
6x + 4 & = & 100 \\
-4 & & -4 \\
6x & = & 96
\end{array}
$$

is correct, but

$$
\begin{array}{rcl}
6x + 4 & = & 100 \\
-4 & & \\
6x & = & 100
\end{array}
$$

isn't.

Hint #3

The opposite operations are:

- $+ \longleftrightarrow -$
- $\times \longleftrightarrow \div$

Answers and detailed answer explanations for these problems

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Describe how to solve an equation.

Answer key: A, B, D, F

An equation is like a scale in balance: We have terms on both sides of the equal sign.

We can modify the equation by using the **Distributive Property** or by **Combining Like Terms**.

Then to solve, we should **Isolate the Variable** by using **Opposite Operations** on both sides of the equation.