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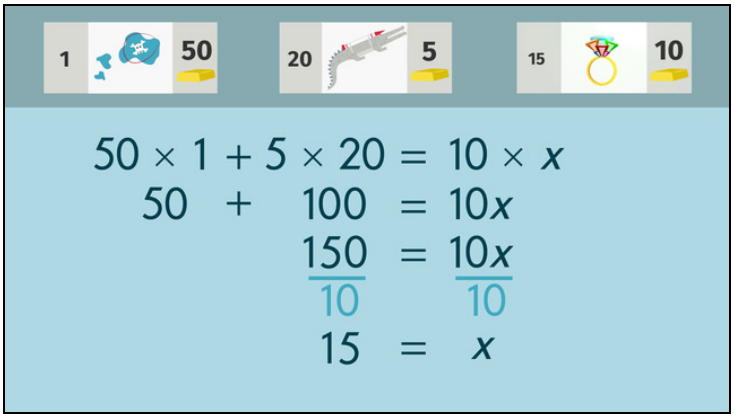
Solving Equations: Word Problems



1. **Summarize what you know about opposite operations.**
2. Examine the number of diamonds Dr. Evil can buy for his mom's ring.
3. Decide which equation best describes each of the given situations.
4. Determine how many hours Dr. Evil's assistant can work.
5. Set up equations and solve for the unknown values.
6. Solve the following equations.

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

Summarize what you know about opposite operations.

Choose the correct statements.

- [ ] A: We use opposite operations to isolate the variable x.
- [ ] B: The opposite operation of addition is addition.
- [ ] C: The opposite operation of addition is subtraction.
- [ ] D: If we use opposite operations, we do it on one side of the equation.
- [ ] E: If we use opposite operations, we do it on both sides of the equation.
- [ ] F: The opposite operation of multiplication is division, and vice versa.

Hints for solving these problems

1 of 6

Summarize what you know about opposite operations.

Hint #1

To solve an equation like $x + 3 = 7$, you must isolate the variable:

$$\begin{array}{rcll} x+3 & = & 7 & \\ -3 & & -3 & |(+ \leftrightarrow -) \text{ Opposite Operations} \\ x & = & 4. & \end{array}$$

Hint #2

Think of an equation like a scale in balance.

Removing weight on one side leads to an imbalance, so to stay balanced, you will need to remove it on the other side, too.

Hint #3

To solve an equation, the goal is to get a solution for the variable. That means that you should isolate the variable on one side of the equation.

Answers and detailed answer explanations for these problems

1 of 6

Summarize what you know about opposite operations.

Answer key: A, C, E, F

We can use **Opposite Operations** to isolate the variable x.

What are opposite operations?

- The opposite operation of addition is subtraction, and vice versa.
- The opposite operation of multiplication is division, and vice versa.

Remember, if you perform an operation on one side of an equation, you have to perform the same operation on the other side too. Otherwise, the equation will be imbalanced.