Algebra I

Solving Multi-Step Equations

Equations that require more than two steps to solve are called multi-step equations.

1. Clear the equation of fractions and decimals.
2. Use the Distributive Property to remove parentheses on each side.
3. Combine the like terms on each side.
4. Undo addition or subtraction.
5. Undo multiplication or division.

Note:

to clear equations of fractions

1. find a common denominator of all fractions in the equation
2. multiply *every* term by the common denominator

to clear equations of decimals

1. find the term with the largest number of decimal places
2. multiply *every* term by the power of 10 that will make the coefficient of the term in #1 an integer

Example:

$$\frac{1}{4}(m-16)=7$$

Distribute:

$$\frac{1}{4}m-\frac{1}{4}(16)=7$$

Combine like terms:

$$\frac{1}{4}m-4=7$$

Add 4 to both sides:

$$\frac{1}{4}m-4+4=7+4$$

Simplify:

$$\frac{1}{4}m=11$$

Multiply both sides by 4:

$$\frac{1}{4}m(4)=11(4)$$

Simplify:

$$m=44$$