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Solving Two-Step Equations Guided Notes

A **Two-Step Equation** is an equation that can be solved in two steps using the properties of equality and undoing the mathematical operations.

If x is the variable in the equation, then the two-step equation can be of the forms:

$$ax + b = c \qquad ax - b = c$$

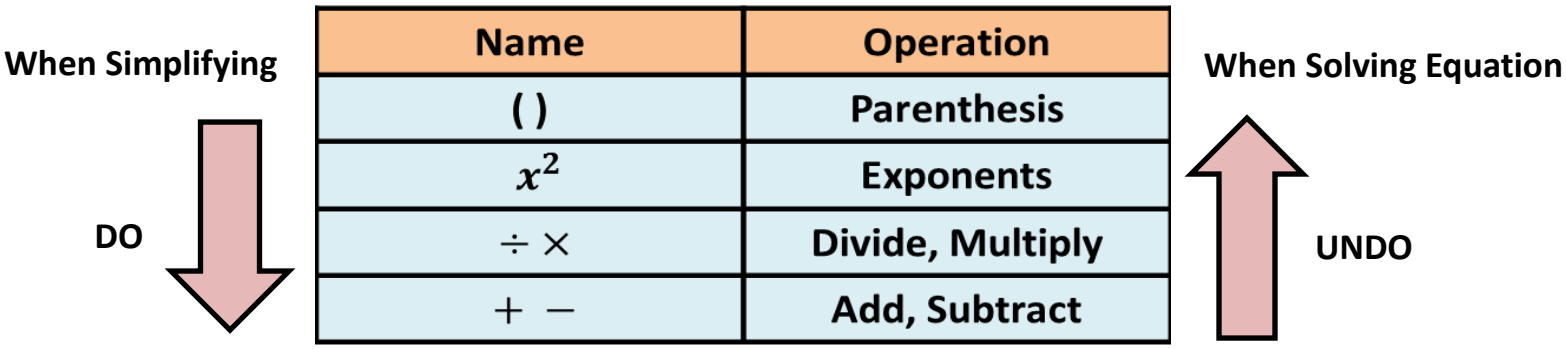
$$\frac{x}{a} + b = c \qquad \frac{x}{a} - b = c$$

$$a(x + b) = c \qquad a(x - b) = c$$

$$\frac{x + a}{b} = c \qquad \frac{x - a}{b} = c$$

Undoing the Order of Operations

While simplifying the mathematical expressions, the order of operations followed is PEDMAS.



Name	Operation
( )	Parenthesis
x^2	Exponents
$\div \times$	Divide, Multiply
$+ \ -$	Add, Subtract

When solving an equation, we undo the operations in equation in the opposite sequence i.e. from bottom to top.

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Solving Two-Step Equations Guided Notes

Solving Two-Step Equations without Parenthesis

In solving these types of equations, we first add or subtract and then multiply or divide according to the equation.

$ax + b = c$ $\qquad$ $ax - b = c$

$\frac{x}{a} + b = c$ $\qquad$ $\frac{x}{a} - b = c$

Problem 1: Solve $2x - 6 = 8$.

Problem 2: Solve $\frac{x}{4} + 3 = 9$.

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Solving Two-Step Equations Guided Notes

Solving Two-Step Equations with Parenthesis

In solving these types of equations, we first multiply or divide and then solve the expression in parenthesis using addition or subtraction, according to the equation.

$$a(x+b)=c \qquad a(x-b)=c$$

$$\frac{x+a}{b}=c \qquad \frac{x-a}{b}=c$$

Problem 3: Solve $5(x-1)=30$.

Problem 4: Solve $\frac{x+10}{4}=5$.