

2.1 Solving Equations

Need To Know



- Check a solution to an equation
- Understand Addition property of equality
- Understand Multiplication property of equality
- Use them to solve equations

Equations

Definition – The _____ to an equation is the set of all numbers that can replace the variable and make the equation a true statement.

Examples:

Is 4 a solution to $2x + 3 = 7$? Is $4/3$ a solution to $8 = 3x + 4$?

Equivalent Equations

Definition – _____ are two or more equations with the same solution.

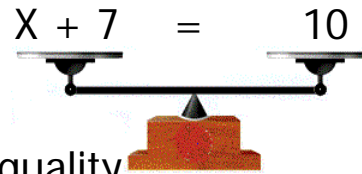
Example:

$$x + 3 = 9$$

Observation:

Addition Property of Equality

Equations can be thought of as a balanced system.



Addition Property of Equality

In Words:



Solve Equations

Example:

$$x + 3 = 9$$

Solving Equations

Goal:

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How:

- Make equivalent _____
_____ all the
operations associated with
the unknown.
- Show your thinking by
writing the algebra step
on _____ sides of the
equal sign.



Solve Equations

Solve for x

$$x - 4 = 12$$

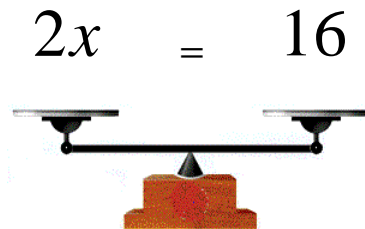
Solve for w

$$-3.5 + w = 8.2$$

Solve for b

$$b + \frac{2}{3} = -\frac{1}{6}$$

Multi. Property of Equality



Multi. Property of Equality

Multiplication Property of Equality

In Words: If you multiply or divide the same **non-zero** number to both sides of the equation, the result is an equivalent equation.

Example: Solve each.

$$5x = -20$$

$$-3r = 27$$

$$-\frac{5x}{6} = 3$$

end