Do Now

Solve the following:

1) $8(3x + 10) = 28x - 14 - 4x$

$24x + 80 = 24x - 14$

$-24x \quad -24x$

$80 = -14$ No Solution

2) $5(3x - 2) = 15x - 10$

$15x - 10 = 15x - 10$

$-15x \quad -15x$

$-10 = -10$

All Real Numbers

$\mathbb{R}$

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Types of Solutions

Describing a Solution Set of an Equation

The solution set of an equation is the set of all values for the variable which make the equation a true statement.

Solution Notation

$\{1\}$

$9p + 7 - 2p = 14$

$7p + 7 = 14$

$-7 \quad -7$

$7p = 7$

$\frac{7p}{7} = \frac{7}{7}$

$p = 1$

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Types of Solutions

When algebraic equations contain a variable, we must determine whether the equation:

- Is true for all numbers
  Solution set is written as $\mathbb{R}$

ℝ All Real Numbers

- Is true for a certain set of numbers
  Solution x = 2, written as {2}
- Is never true for any number
  Solution set is written as { } or ∅

{ }

No Solution

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Types of Solutions

Solve the equation. Write it's solution set.

1. $15x - 3 = 12x$

$-15x \quad -15x$

$-3 = -3x$

$\frac{-3}{-3} \quad \frac{-3x}{-3}$

$1 = x$

{1}

Ck

$15x - 3 = 12x$

$15(1) - 3 = 12(1)$

$15 - 3 = 12$

$12 = 12$ ✓

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Types of Solutions

Solve the equation. Write it's solution set.

4. $z - 6 = z - 2$

$+6 \quad +6$

$1z = 1z + 4$

$-1z \quad -1z$

$0 \neq 4$ False

No Solution

$\{\ \}$ or $\emptyset$

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Types of Solutions

Solve the equation. Write it's solution set.

6. $16f + 24 = 8(2f + 3)$

$16f + 24 = 16f + 24$

$-16f \quad -16f$

$24 = 24$ ✓

True

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Types of Solutions

Solve the equation. Write it's solution set.

5. $6(4s+12)=8(3s-14)$

$24s+72=24s-112$
$+112 \quad +112$
$24s+184=24s$
$-24s \quad -24s$
$184 \neq 0$
$\emptyset$

False

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Types of Solutions

Solve the equation. Write it's solution set.

2. $\frac{2}{3}(3x+6)=5x-8-2x$

$2x+4=3x-8$
$-2x \quad -2x$
$4=x-8$
$+8 \quad +8$
$12=x$
$\{12\}$

Ck

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