8th Grade Common Core Name Key ID: 1

# Solving Equations with Variables on Both Sides.

Date_____ Period____

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**Solve each equation.**

1) $7 + 5r + 3 + 5 = 1 + 7r$

$15 + 5r = 1 + 7r$
$-1 \quad -1$
$14 + 5r = 7r$
$-5r \quad -5r$
$\frac{14}{2} = \frac{2r}{2}$
$7 = r$

2) $-4 + 6k + 8k = -4 - 7k$

$-4 + 14k = -4 - 7k$
$+4 \quad +4$
$14k = -7k$
$-7k \quad -7k$
$\frac{7k}{7} = \frac{0}{7}$
$k = 0$

3) $8n - 7 = 7n - 14$

$-7n \quad -7n$
$n - 7 = -14$
$+7 \quad +7$
$n = -7$

4) $-7b - 14 = -5b - 4b$

$-7b - 14 = -9b$
$+7b \quad +7b$
$\frac{-14}{-2} = \frac{-2b}{-2}$
$7 = b$

5) $8 + 7n = 6n + 2n$

$8 + 7n = 8n$
$-7n \quad -7n$
$8 = n$

6) $2 - 2n - 2n = -5 - 3n$

$2 - 4n = -5 - 3n$
$+4n \quad +4n$
$2 = -5 + n$
$+5 \quad +5$
$7 = n$

7) $7x = 3x + 4x$

$\frac{7x}{7} = \frac{7x}{7}$ OR $7x = 7x$
$x = x$ $-7x \quad -7x$
$0 = 0$

Infinite Solutions

8) $4 + 7x = 8x - 2x$

$4 + 7x = 6x$
$-7x \quad -7x$
$\frac{4}{-1} = \frac{-x}{-1}$
$-4 = x$

9) $2 + 7n = -4 + 5n$

$-2 \quad -2$
$7n = -6 + 5n$
$-5n \quad -5n$
$\frac{2n}{2} = \frac{-6}{2}$
$n = -3$

10) $-7 - 3a = 1 - 4a$

$+7 \quad +7$
$-3a = 8 - 4a$
$+4a \quad +4a$
$a = 8$