Key

Solving Equations 7 (II) Solving Equations with variables on Both Sides

Name:_____ **NOTE: There is more than one correct way to solve each equation. The idea is to do it in the fewest amount of steps.**

1) $.2x - 1.8 + .2x = .6 - .2x + 1.2$

Multiply by 10

$2x - 18 + 2x = 6 - 2x + 12$

$4x - 18 = -2x + 18$

$+2x \quad +18 \quad +2x \quad +18$

$\frac{6x}{6} = \frac{36}{6}$

1 answer: $x = 6$

2) $-\frac{4}{3}x + 2 - 2x = x - 12 + \frac{x}{3}$

Multiply by 3

$-4x + 6 - 6x = 3x - 36 + x$

$-10x + 6 = 4x - 36$

$+10x \quad +36 \quad +10x \quad +36$

$\frac{42}{14} = \frac{14x}{14}$

2 answer: $x = 3$

3) $\frac{1}{3}x + .5 + \frac{2}{3}x = \frac{5}{3} + \frac{1}{3}x + \frac{25}{6}$

Multiply by 6

$2x + 3 + 4x = 10 + 2x + 25$

$6x + 3 = 2x + 35$

$\frac{4x}{4} = \frac{32}{4}$

3 answer: $x = 8$

4) $2x + 1 - \frac{4}{7}x = x - \frac{6}{7} + \frac{12}{7}x - 2$

Multiply by 7

$14x + 7 - 4x = 7x - 6 + 12x - 14$

$10x + 7 = 19x - 20$

$-10x \quad +20 \quad -10x \quad +20$

$\frac{27}{9} = \frac{9x}{9}$

4 answer: $x = 3$

5) $2 + .3x - 3 = .5x + 2 - .9x + .5$

Multiply by 10

$20 + 3x - 30 = 5x + 20 - 9x + 5$

$3x - 10 = -4x + 25$

$+4x \quad +10 \quad +4x$

$\frac{7x}{7} = \frac{35}{7}$

5 answer: $x = 5$

6) $.6x + 4 + .4x + 4 = 2x - 2 - 5$

Multiply by 10

$6x + 40 + 4x + 40 = 20x - 20 - 50$

$10x + 80 = 20x - 70$

$-10x \quad +70 \quad -10x \quad +70$

$\frac{150}{10} = \frac{10x}{10}$

6 answer: $x = 15$

7) $\frac{4}{11}x - \frac{5}{11} + \frac{x}{11} = \frac{8}{11} + \frac{3}{11}x - \frac{1}{11}$

Multiply by 11

$4x - 5 + x = 8 + 3x - 1$

$5x - 5 = 3x + 7$

$-3x \quad +5 \quad -3x \quad +5$

$\frac{2x}{2} = \frac{12}{2}$

7 answer: $x = 6$

8) $17 + 4x + \frac{49}{3} - \frac{2}{3}x = \frac{20}{3}x + \frac{40}{3}$

Multiply by 3

$51 + 12x + 49 - 2x = 20x + 40$

$10x + 100 = 20x + 40$

$-10x \quad -40 \quad -10x \quad -40$

$\frac{60}{10} = \frac{10x}{10}$

8 answer: $x = 6$

9) $.1x + .02 - .03x = .71 - .06x - .3$

Multiply by 100

$10x + 2 - 3x = 71 - 6x - 30$

$7x + 2 = -6x + 41$

$+6x \quad -2 \quad +6x \quad -2$

$\frac{13x}{13} = \frac{39}{13}$

9 answer: $x = 3$

10) $3 - x + 3 = .5x - 6 + \frac{x}{2}$

Multiply by 2

$6 - 2x + 6 = x - 12 + x$

$-2x + 12 = 2x - 12$

$+2x \quad +12 \quad +2x \quad +12$

$\frac{24}{4} = \frac{4x}{4}$

10 answer: $x = 6$