Solving for x: Lesson 09

Multi-step Equations: Worksheet 1

Name: _____

Remember to show your steps, keep it neat, and be careful!

Solve:

$$4x-6(2x-5)-9 = 3(7x+10)-11(x-6)-3$$

$4x-12x+30-9 = 21x+30-11x+66-3$

$-8x+21 = 10x+93$

$+8x \quad +8x$

$21 = 18x+93$

$-93 \quad -93$

$-72 = 18x$

$\frac{-72}{18} = \frac{18x}{18}$

$-4 = x$

Check your answer:

$4(-4)-6(2(-4)-5)-9 \stackrel{?}{=} 3(7(-4)+10)-11(-4-6)-3$

$-16-6(-13)-9 = 3(-18)-11(-10)-3$

$-16+78-9 = -54+110-3$

$53 = 53$ ✓ (1)

Solve:

$$-5(2x-5)-3(x-11)+4x = 2(9x-3)-7(x+6)-4x-6$$

$-10x+25-3x+33+4x = 18x-6-7x-42-4x-6$

$-9x+58 = 7x-54$

$+9x \quad +9x$

$58 = 16x-54$

$+54 \quad +54$

$\frac{112}{16} = \frac{16x}{16}$

$7 = x$

$$\frac{-3}{4}(2w-8)+5+\frac{1}{6}(3w-12) = \frac{2}{3}(w+9)-(2w+4)$$

$-\frac{3}{2}w+6+5+\frac{1}{2}w-2 = \frac{2}{3}w+6-2w-4$

$-\frac{3}{2}w+\frac{1}{2}w = -\frac{2}{2}w = -1w$

$\frac{2}{3}w-2w = \frac{2}{3}w-\frac{6}{3}w = -\frac{4}{3}w$

$-\frac{3}{3}w-w+9 = -\frac{4}{3}w+2$

$+\frac{4}{3}w \quad +\frac{4}{3}w$

$\frac{1}{3}w+9 = 2$

$-9 \quad -9$

$\frac{3}{1}\cdot\frac{1}{3}w = -7\cdot\frac{3}{1}$

$w = -21$