

Warm - Up

Simplify the expression:

1. $3(4x - 3) + 2x$

$$\begin{array}{r} 12x - 9 + 2x \\ \hline 14x - 9 \end{array}$$

Solve for x:

2. $x + 7 = -15$

$x = -22$

3. $4x - 9 = 19$

$$\begin{array}{r} +9 \quad +9 \\ 4x = 28 \\ \hline 4 \quad 4 \end{array}$$

$x = 7$

Check:

$4x - 9 = 19$

$4(7) - 9 = 19$

$28 - 9 = 19$

$19 = 19$

Solving multi step equations

Multi-Step Equations

*** Simplify first, then solve!

$$\begin{aligned}
 & \text{3(x+4) = 27} \\
 & \text{3x + 12 = 27} \\
 & \quad -12 \quad -12 \\
 & \text{3x = 15} \\
 & \frac{3x}{3} = \frac{15}{3} \\
 & \text{x = 5}
 \end{aligned}$$

$$-7x + 9x + 4 = 20$$

$$2x + 4 = 20$$

$$x = 8$$

$$\begin{aligned}
 & \text{2(-4x + 6) = 162} \\
 & -8x + 12 = 162 \\
 & \quad -12 \quad -12 \\
 & -8x = 150 \\
 & \frac{-8x}{-8} = \frac{150}{-8} \\
 & \text{x = -18}\frac{3}{4}
 \end{aligned}$$

$$5(2x + 3) + 3 = 38$$

$$10x + 15 + 3 = 38$$

$$10x + 18 = 38$$

$$0 = 36 - 6x + 7x$$

$$0 = 36 - 6(-36) + 7(-36)$$

$$0 = 36 + 216 - 252$$

$$0 = 252 - 252$$

$$0 = 0$$

$$2(x + 3) = 9$$

$$-7x + 28 + x = -2$$

$$-6x + 28 = -2$$

$$-28 \quad -28$$

$$-6x = -30$$

$$\frac{-6x}{-6} = \frac{-30}{-6}$$

$$x = 5$$

$$-7(5) + 28 + 5 = -2$$

$$-35 + 28 + 5 = -2$$

$$-8(x + 3) + 7x = 15$$

$$2. \frac{4x + 8}{2} = -64 \cdot 2$$

$$4x + 8 = -128$$

$$\frac{4x}{4} = \frac{-136}{4}$$

$$x = -34$$

$$\frac{c-2}{2} - 1 = 2$$

$$2 \cdot \frac{c-2}{2} = 3 \cdot 2$$

$$c-2 = 6$$

$$c = 8$$

