Solving Equations Using the Distributive Property

Step 1: Use the Distributive Property to remove the parentheses.
Step 2: Combine like terms.
Step 3: Solve the equation by isolating the variable.
Step 4: Check your answer by substituting the solution into the original equation.

Directions: Solve each equation and check your solution.

1. $2(m-8)=14$

$2m-16=14$
$+16 \quad +16$
$\frac{2m}{2}=\frac{30}{2}$
$\boxed{m=15}$

Check

$m=15$
$2(m-8)=14$
$2(15-8)=14$
$2(7)=14$
$14=14$ ✓

2. $45=-3(2m-7)$

$45=-6m+21$
$-21 \quad -21$
$\frac{24}{-6}=\frac{-6m}{-6}$
$-4=m$
$\boxed{m=-4}$

$m=-4$
$45=-3(2m-7)$
$45=-3[2(-4)-7]$
$45=-3[-8-7]$
$45=-3[-15]$
$45=45$ ✓

3. $3(x-4)-2=-11$

$3x-12-2=-11$
$-12-2=-14$
$3x-14=-11$
$+14 \quad +14$
$\frac{3x}{3}=\frac{3}{3}$
$\boxed{x=1}$

$x=1$
$3(x-4)-2=-11$
$3(1-4)-2=-11$
$3(-3)-2=-11$
$-9-2=-11$
$-11=-11$ ✓

4. $-2 = 8(5-x) + 5x$

$-2 = 40 - 8x + 5x$

$-2 = +40 - 3x$

$-40 \quad -40$

$\frac{-42}{-3} = \frac{-3x}{-3}$

$14 = x$

$\boxed{x = 14}$

$-2 + 40 = -42$

$x = 14$

$-2 = 8(5-x) + 5x$

$-2 = 8(5-14) + 5(14)$

$-2 = 8(-9) + 5(14)$

$-2 = -72 + 70$

$-2 = -2$ ✓

5. $1.2m - .6(m-2) = 2.4$

$12m - 6(m-2) = 24$

$12m - 6m + 12 = 24$

$6m + 12 = 24$

$-12 \quad -12$

$\frac{6m}{6} = \frac{12}{6}$

$\boxed{m = 2}$

$m = 2$

$1.2m - .6(m-2) = 2.4$

$1.2(2) - .6\underbrace{(2-2)}_{0} = 2.4$

$\underbrace{1.2(2)} - \underbrace{.6(0)} = 2.4$

$\begin{array}{r} 1.2 \\ \times\ 2 \\ \hline 2.4 \end{array}$

$2.4 - 0 = 2.4$

$2.4 = 2.4$ ✓