

## HW: Multistep Equations Worksheet

**Warm up:**

Simplify.

$$1) -5x - 2(3x - 5) + 4(5 + x)$$
$$\underline{-5x} - \underline{6x} + 10 + 20 + \underline{4x}$$
$$\underline{-7x + 30}$$

$$2) (x - 2) + 2(5x - 1) - 3(x + 2)$$
$$\underline{x} - \underline{2} + \underline{10x} - \underline{2} - \underline{3x} - \underline{6}$$
$$\underline{8x - 10}$$

$$\underline{5x} + 7 + \underline{10x} = 52$$

$$15x + 7 = 52$$

$$\underline{-7} \quad \underline{-7}$$

$$\underline{15x = 45}$$

$$\underline{15} \quad \underline{15}$$

$$x = 3$$

$$4 - 2(3x + 2) = -30$$

$$4 - 6x - 4 = -30$$

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

$$x = 5$$

$$-5x + 3(6x - 5) = 21$$

$$\underline{-5x + 18x - 15 = 21}$$

$$13x - 15 = 21$$

$$+15 \quad +15$$

$$\underline{13x = 36}$$

$$\underline{13 \quad 13}$$

$$x = \frac{36}{13}$$

$$(3 + x) + (2x - 3) - (4x + 5) = 2$$

$$\underline{3} + x + \underline{2x} - \underline{3} - \underline{4x} - \underline{5} = 2$$

$$\begin{array}{r} -5 - x = 2 \\ +5 \qquad +5 \end{array}$$

$$\frac{-x}{-1} = \frac{7}{-1}$$

$$\boxed{x = -7}$$

$$(4x - 1) - 3(3x - 2) + 4(2x + 5) = -7$$

$$\underline{4x} - \underline{1} - \underline{9x} + \underline{6} + \underline{8x} + \underline{20} = -7$$

$$3x + 25 = -7$$
$$\underline{-25} \quad \underline{-25}$$

$$\frac{3x}{3} = \frac{-32}{3}$$

$$x = -\frac{32}{3}$$

## HW Solutions

1)  $7x - 2$

6)  $7x - 5$

2)  $5x + 2$

7)  $-5x + 30$

3)  $-2x - 1$

8)  $-11x - 27$

4)  $2x + 17$

9)  $-2x - 2$

5)  $15x - 32$

10)  $-6x - 43$

$$\begin{aligned} \textcircled{9} \quad & -10 - 2(x-4) \\ & \quad \quad \quad \curvearrowright \quad \quad \quad \curvearrowright \\ & \underline{-10} - 2x + \underline{8} \\ & \quad \quad \quad \textcircled{-2x - 2} \end{aligned}$$



$$\textcircled{1} \quad 8x - (x + 5)$$

$$\underline{8x} - \underline{x} - 5$$

$$\textcircled{7x - 5}$$

$$\begin{aligned} \textcircled{6} \quad & -2x - 3(x-10) \\ & \underbrace{\hspace{1.5cm}} \quad \underbrace{\hspace{1.5cm}} \quad \underbrace{\hspace{1.5cm}} \\ & -2x - 3x + 30 \\ & \underline{\hspace{1.5cm}} \quad \underline{\hspace{1.5cm}} \quad \underline{\hspace{1.5cm}} \\ & \textcircled{-5x + 30} \end{aligned}$$

$$\textcircled{1} \quad \underline{4x-2} + \underline{3x}$$

$$\textcircled{7x-2}$$

$$\textcircled{E} \quad -2 + 5(3x - 6)$$
$$= -2 + 15x - 30$$
$$15x - 32$$

$$\textcircled{3} \quad \frac{5x+6}{\cancel{mm}} - \frac{7x-7}{\cancel{mm}}$$

$$\textcircled{-2x-1}$$

$$\begin{aligned} 5x-7x \\ 5-7 \\ 5+(-7) \end{aligned}$$

$$\begin{aligned} 6-7 \\ 6+(-7) \\ -1 \end{aligned}$$

$$\textcircled{10} \quad -5 + 2(3x - 4) - 6(2x + 5)$$

$$\begin{array}{ccccccc} -5 & + & 6x & - & 8 & - & 12x & - & 30 \\ \text{mm} & & \text{mm} & & \text{mm} & & \text{mm} & & \text{mm} \end{array}$$

$$\textcircled{-6x - 43}$$

$$\begin{array}{l} +3 - 30 \\ -13 + (-30) \end{array}$$

$$\textcircled{4} \quad 5 + \underline{2(x+6)}$$

$$\underline{5} + 2x + \underline{12}$$

$$\textcircled{2x + 17}$$

$$1) 5x - 8 - 12x + 9 = -5$$

$$2) -3 - 4(x + 3) = 12$$

$$3) 7x - 3 + 5(2x - 2) = 17$$

$$4) 4(2x + 5) - 6 = -10$$

$$5) (2x + 3) - 5(3x - 1) + 2(4x - 4) = 12$$



$$1) \underline{5x} - 8 - \underline{12x} + 9 = -5$$

$$\underline{-7x} + 1 = -5$$

$$\underline{-7x} = \underline{-6}$$

$$\underline{x = \frac{6}{7}}$$

$$2) -3 - 4(x + 3) = 12$$

$$\underline{-3} - 4x - \underline{12} = 12$$

$$\begin{array}{r} -4x - 15 = 12 \\ \quad \quad \quad \uparrow 15 \quad \uparrow 15 \end{array}$$

$$\begin{array}{r} \hline -4x = 27 \\ \hline \end{array}$$

$$\begin{array}{r} \hline x = -\frac{27}{4} \\ \hline \end{array}$$

$$3) 7x - 3 + 5(2x - 2) = 17$$

$$4) 4(2x + 5) - 6 = -10$$

$$5) (2x + 3) - 5(3x - 1) + 2(4x - 4) = 12$$

