

**Algebra 3-6: The Distributive Property & Adding Like Terms**

**Warm-Up**

Solve. Show steps. Check.

1.  $15 = 3 - 5w$

$$\begin{array}{r} -3 \quad -3 \\ \hline 12 = -5w \\ \hline -5 \quad -5 \\ \hline -12 = 5w \end{array}$$

$\boxed{-\frac{12}{5} = w}$

2.  $4 - a = 12$

$$\begin{array}{r} -4 \quad -4 \\ \hline -a = 8 \\ \hline -1 \quad -1 \\ \hline a = -8 \end{array}$$

$\boxed{a = -8}$

3.  $\frac{2}{3}x + (-4) = 6$

$$\begin{array}{r} \frac{2}{3}x - 4 = 6 \\ \hline \frac{2}{3}x - 4 + 4 = 6 + 4 \\ \hline \frac{2}{3}x = 10 \\ \hline \frac{3}{2} \cdot \frac{3}{2} \cdot \frac{2}{3}x = \frac{3}{2} \cdot 10 \\ \hline x = \frac{30}{2} \\ \hline \boxed{x = 15} \end{array}$$

Vocabulary	Definition	Example
Coefficient	# in front of variable	$5x^2 \rightarrow \underline{\underline{5}}$
Like Terms	$5a + 2a = 7a$ $5ab + 3ab = 8ab$	$5x^2 + 4x^2 = 9x^2$ $9ab^2 + 2ab^2 = 11ab^2$
Distributive Property	$3(a+b)$ $3a + 3b$	$4x + 3x$ $x(4 + 3)$

**Examples**

Simplify. Lowest terms possible.

1.  $\underline{8s} + \underline{-5s}$

$$\boxed{3s}$$

2.  $(\underline{3s} + \underline{d} + \underline{6}) + (\underline{2d} + \underline{s})$

$$\boxed{4s + 3d + 6}$$

3.  $\underline{4n^2} + \underline{(-3n^2)} + 4$

$$\boxed{1n^2 + 4}$$

4.  $\underline{4y} + \underline{(-y)} + 3$

$$\boxed{3y + 3}$$

5.  $\underline{3m^2} + \underline{5m} - \underline{8m^2}$

$$\boxed{-5m^2 + 5m}$$

unlike

6.  $\underline{10r^3} - \underline{2r} + \underline{r^3} + \underline{6r}$

$$\boxed{11r^3 + 4r}$$

7.  $5 - x + 6x + 3x^2$

$$5x + 5 + 3x^2$$

8.  $2y^2 + 5y^2 + 1y^2 - 8y^2$

$$0$$

9.  $3x + 2x^2$

$$3x + 2x^2$$

Solve. Show steps. Check.

10.  $-3x + 5x = -12$

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

$$x = -6$$

11.  $6 + -2x + (-9x) = 39$

$$\frac{6 - 11x}{-6} = \frac{39}{-6}$$

$$\frac{-11x}{-11} = \frac{33}{-11}$$

$$x = -3$$

12.  $-2x + 3x - 4 = 1$

$$1x - 4 = 1$$

$$+4 + 4$$


$$x = 5$$

13.  $2y + 10 - 3y = 14$

$$\frac{-1y + 10}{-1} = \frac{14}{-1}$$

$$-y = -14$$

$$y = 14$$

3. 

$$n(21 + 8) = 21n + 8n = 29n$$

4.  $3y + 7y = 10y$

