

The Distributive Property and
Combining Like Terms Worksheet #1

Name: Key

Date: _____ Pd: _____

The Distributive Property

$$a(b+c) = ab+ac$$

$$(d-e)f = df-ef$$

Example 1: $4(2x+3)$
 $4(2x)+4(3)$
 $8x+12$

Example 2: $(m-3)m$
 $m(m)-3(m)$
 m^2-3m

Use the distributive property to rewrite the expression as a sum or difference of terms.
Circle your final answer in standard form. (DESCENDING ORDER)

1. $3(h+1)$
 $3(h) + 3(1)$
 $3h+3$

2. $(9-s)5$
 $(9+(-s))5$
 $9(5) + (-s)(5)$
 $45 + (-5s)$
 $-5s+45$

3. $x(4+m)$
 $x(4) + x(m)$
 $4x+mx$

4. $-6(x-11)$
 $-6(x+(-11))$
 $-6(x) + (-6)(-11)$
 $-6x+66$

5. $1.5(8x-6y)$
 $1.5(8x+(-6y))$
 $1.5(8x) + 1.5(-6y)$
 $12x+(-9y)$

6. $(a-5)2.7$
 $(a+(-5))2.7$
 $a(2.7) + (-5)(2.7)$
 $2.7a+(-13.5)$

7. $\frac{1}{2}(n+6)$
 $\frac{1}{2}(n) + \frac{1}{2}(6)$
 $\frac{1}{2}n+3$

8. $(3x-18)\frac{2}{3}$
 $(3x+(-18))\frac{2}{3}$
 $3x(\frac{2}{3}) + (-18)(\frac{2}{3})$
 $2x+(-12)$

9. $y(3+y)$
 $y(3) + y(y)$
 $3y+y^2$
 y^2+3y

10. $(3+y)y$
 $3(y) + y(y)$
 $3y+y^2$
 y^2+3y

$$11. \quad 2\frac{1}{2}(2-4x)$$

$$\begin{array}{l} \rightarrow 2\frac{1}{2}(2+(-4x)) \\ 2\frac{1}{2}(2) + 2\frac{1}{2}(-4x) \\ 5 + (-10x) \\ \boxed{-10x + 5} \end{array}$$

$$12. \quad 2s(4s+4)$$

$$\begin{array}{l} 2s(4s) + 2s(4) \\ \boxed{8s^2 + 8s} \end{array}$$

Like terms must have the same variables with the same exponents.
To add **like terms**, add their **coefficients**.

Like Terms $\rightarrow 4x, -1.5x, \frac{1}{3}x$

Not Like Terms $\rightarrow 4x, 4x^2, 2xy$

Example: $x^2 + 2y + 3x^2 + 5y$
 $x^2 + 3x^2 + 2y + 5y$
 $4x^2 + 7y$

(Reorder using the Commutative Property)
(Add Coefficients)

Simplify by combining the **like terms** and write your answer in standard form.

$$13. \quad \underline{x} + \underline{3} + \underline{3x} + \underline{10}$$

$$\boxed{4x + 13}$$

$$14. \quad \underline{14} + \underline{y^2} + \underline{7y} + \underline{10}$$

$$\boxed{y^2 + 7y + 24}$$

$$15. \quad \underline{5xy} + \underline{2x} + \underline{5xy}$$

$$\boxed{2x + 10xy}$$

$$16. \quad \underline{4n} + \underline{2.8n} + \underline{7.8m}$$

$$\boxed{7.8m + 6.8n}$$

$$17. \quad 4 - 2\frac{1}{2}q - 5 + 5q$$

$$\underline{4} + \underline{(-2\frac{1}{2}q)} + \underline{(-5)} + \underline{5q}$$

$$\boxed{\frac{5}{2}q + (-1)}$$

$$18. \quad 4n^2 - 2x + 2nx$$

$$\underline{4n^2} + \underline{(-2x)} + \underline{2nx}$$

$$\boxed{4n^2 + 2nx + (-2x)}$$

$$19. \quad 2.5x - 1\frac{2}{5}x + \frac{3}{4}x - (-x^2)$$

$$\underline{2.5x} + \underline{(-1.4x)} + \underline{.75x} + \underline{x^2}$$

$$20. \quad xy - y^2 + \frac{3}{5}y^2 + (-xy) + z^2$$

$$\underline{xy} + \underline{(-y^2)} + \underline{\frac{3}{5}y^2} + \underline{(-xy)} + \underline{z^2}$$

$$x^2 + 1.1x + .75x$$

$$\boxed{-\frac{2}{5}y^2 + z^2}$$

$$\boxed{x^2 + 1.85x}$$

or

$$\boxed{x^2 + \frac{37}{20}x}$$