

Simplifying by Distributive Property

The distributive property is used when a number is in front of the parentheses.

$$8(a+c)$$

*Make sure you multiply everything in the parenthesis by the number outside. $a = \text{law}$

$$8 \cdot a + 8 \cdot c$$

$$8a + 8c$$

Or you can use the box method:

Area Model

$$\begin{array}{r} a \\ + c \\ \hline 8a + 8c \end{array}$$

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

$$\begin{array}{r} x - 4 \\ 3 | 3x - 3y \\ \hline 3x - 3y \end{array}$$

2. $3(2x-4)$

$$\begin{array}{r} x - 4 \\ 3 | 6x - 12 \\ \hline 6x - 12 \end{array}$$

3. $-5(x-6)$

$$\begin{array}{r} x - 6 \\ -5 | -5x + 30 \\ \hline -5x + 30 \end{array}$$

$$-5x + 30$$

4. $2(b-8a) - 5(b+4a)$

$$\begin{array}{r} b - 8a \\ 2 | 2b - 16a - 5b - 20a \\ \hline 2b - 16a - 5b - 20a \end{array}$$

$$\begin{array}{r} b - 8a \\ 2 | 2b - 16a \\ \hline 2b - 16a \end{array}$$

$$\begin{array}{r} b - 4a \\ -5 | -5b - 20a \\ \hline -5b - 20a \end{array}$$

Solving - Distributive Property

5. $7(n+1) - 4n = 4$

$$\begin{array}{r} n \\ 7 | 7n + 7 \\ \hline 7n + 7 \end{array}$$

$$\rightarrow 3n + 7 = 4$$

$$\begin{array}{r} 3n \\ -3 | -3 \\ \hline n = -1 \end{array}$$

6. $-7(x-3) = -14$

$$\begin{array}{r} x - 3 \\ -7 | -7x + 21 \\ \hline -7x + 21 = -14 \end{array}$$

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$$\begin{array}{r} x - 3 \\ -7 | -7x + 21 \\ \hline -7x + 21 = -14 \end{array}$$

$$x = 5$$

7. $8 = 3 + 5(y-2)$

$$\begin{array}{r} y - 2 \\ 5 | 5y - 10 \\ \hline 5y - 10 \end{array}$$

$$\begin{array}{r} 8 = 3 + 5y - 10 \\ 8 = -7 + 5y \end{array}$$

$$\begin{array}{r} +7 +7 \\ \hline 15 = 5y \\ 5 | 15 \\ \hline 3 = y \end{array}$$

8. $2(x-3) - 3(x-1) = -5$

$$\begin{array}{r} x - 3 \\ -3 | -3x + 3 \\ \hline -3x + 3 = -5 \end{array}$$

$$\begin{array}{r} x - 3 \\ -3 | -3x + 3 \\ \hline -3x + 3 = -5 \end{array}$$

Lice krmz

Solving Equations-distributive property
Class Notes

Name _____
Date _____ Period _____

9. $5(x - 2) - 5x = 10$

$$\begin{array}{r} 0x - 10 = 10 \\ -10 \neq 10 \\ \text{No Solution} \end{array}$$

$$\begin{array}{r} x - 2 \\ \hline 5 | 5x - 10 \end{array}$$

10. $3(m + 5) - 3(m + 3) = 6$

$$\begin{array}{r} m + 5 \\ \hline 3 | 3m + 15 \\ -3 | 3m - 9 \end{array}$$

$$\begin{array}{r} 0m + 6 = 6 \\ 6 = 6 \end{array}$$

$$m = TR$$

It doesn't matter what
m is

11. The length of a rectangle is nine and the width is $(x + 6)$. Find the value of x if the area of the rectangle is 135 cm^2 . ($A = lw$)

$$A = lw$$

$$\begin{array}{r} 135 = 9(x + 6) \\ 135 = 9x + 54 \\ -54 \\ \hline 81 = 9x \end{array}$$

$$\begin{array}{r} x + 6 \\ \hline 9 | 9x + 54 \end{array}$$

$$\begin{array}{r} 9 = x \\ \text{cm} \end{array}$$

12. The length of a rectangle is $(2x)$ and the width is $(x + 2)$. If the perimeter is 40 feet, find the length and width. ($P = 2l + 2w$)

$$\begin{array}{r} 40 = 2(2x) + 2(x + 2) \\ 40 = 4x + 2x + 4 \\ 40 = 6x + 4 \end{array}$$

$$\begin{array}{r} 40 = 6x + 4 \\ -4 \\ \hline 36 = 6x \\ \frac{36}{6} = \frac{6x}{6} \\ \hline 6 = x \end{array}$$

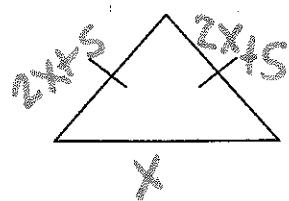
$$\begin{array}{r} \text{length:} \\ 2(6) = 12 \\ \text{width:} \\ (6+2) = 8 \end{array}$$

13. The width of a rectangle is (x) and the length is three times the width. Find the width and length of the rectangle if its perimeter is 112 meters.

$$\begin{array}{r} P = 2l + 2w \\ 112 = 2(3x) + 2(x) \\ 112 = 6x + 2x \\ 112 = 8x \end{array}$$

$$\begin{array}{r} 112 = 8x \\ \frac{112}{8} = \frac{8x}{8} \\ \hline 14 = x \\ \text{m} \end{array}$$

14. The length of each leg of an isosceles triangle is 5 centimeters more than twice the length of the base. If the perimeter of this isosceles triangle is 95 centimeters, what is the length of the base?



$$\begin{array}{r} 95 = 2(2x + 5) + x \\ 95 = 4x + 10 + x \\ 95 = 5x + 10 \end{array}$$

$$\begin{array}{r} 95 = 5x + 10 \\ -10 \\ \hline 85 = 5x \\ \frac{85}{5} = \frac{5x}{5} \\ \hline 17 = x \end{array}$$