

Distributive Property

Foldable goes
Here

Distributive Property

Algebra

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

$$(b+c)a = ba+ca$$

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

$$(b-c)a = ba-ca$$

Simplifying Expressions

What is the simplified form of each expression?

A. $3(x+8) = 3x+24$

B. $(5b-4)(-7) = 28-35b$

Rewriting Fraction Expressions

$$\frac{7x+2}{5} = \frac{7x}{5} + \frac{2}{5}$$

What is the sum or difference equivalent to each expression?

a. $\frac{4x-16}{3} = \frac{4x}{3} - \frac{16}{3}$

b. $\frac{11+3x}{6} = \frac{11}{6} + \frac{3x}{6}$
 $= \frac{11}{6} + \frac{1}{2}x$

c. $\frac{15+6x}{12} = \frac{15}{12} + \frac{6x}{12}$

$$\boxed{\frac{5}{4} + \frac{1}{2}x}$$

Using the Multiplication Property of -1

$$\begin{aligned} & -(2y - 3x) \\ &= (-1)(2y - 3x) \\ & \quad \swarrow \quad \searrow \\ & \boxed{-2y + 3x} \end{aligned}$$

Using the Distributive Property for Mental Math

Deli sandwiches cost \$4.95 each. What is the total cost of 8 sandwiches? Use mental math.

$$\begin{aligned} 8(4.95) &= 8(5 - 0.05) \quad \text{This equals } 4.95 \\ &= 40 - 0.4 \\ &= \boxed{\$39.60} \end{aligned}$$

Term: a number, variable, or the product of a number and one or more variables. Terms are separated by + or - signs.

Ex. $\underline{6a^2} - \underline{5ab} + \underline{3b} - \underline{12}$

4 terms

Constant: a term that has no variable.

Like Terms: have the same variables with the same exponents.

$7a$ and $-3a \rightarrow$ Like terms

$4x^2$ and $12x^2 \rightarrow$ Like terms

$6ab$ and $-2a \rightarrow$ Not like terms, because different variables

Combining Like Terms

What is the simplified form of each expression?

A. $8x^2 + 2x^2 = 10x^2$

They are like terms, so combine to make $10x^2$.

B. $5x - 3 - 3x + 6y + 4$

$$5x - 3x - 3 + 4 + 6y$$

$$2x + 1 + 6y$$

↑
always put constant at the end

$$= 2x + 6y + 1$$