

Worksheet 4-5: Distributive Property**Distributive Property:**

An algebraic expression can be multiplied by a constant.

When an algebraic expression is multiplied by a constant, each and every term of the algebraic expression is multiplied by that constant. This is called the **Distributive Property**.

$$2(a + b + c)$$

$$\begin{aligned} \text{e.g., } &= 2(a) + 2(b) + 2(c) \\ &= 2a + 2b + 2c \end{aligned}$$

$$3(b + c)$$

$$\begin{aligned} \text{e.g., } &= 3(b) + 3(c) \\ &= 3b + 3c \end{aligned}$$

$$-(x + y)$$

$$\begin{aligned} \text{e.g., } &= -(x) + (-(y)) \\ &= -x + (-y) \\ &= -x - y \end{aligned}$$

Practice 1: Multiplication with Brackets

Expand.

(a) $3(x + 6)$

(b) $5(x + y - 5)$

(c) $-(4a - 5)$

(d) $3(2b - c)$

(e) $-4(2x + y - 9)$

(f) $-5(x^2 + 3x - y)$

Answers: 1. (a) $3x + 18$, (b) $5x + 5y - 25$, (c) $-4a + 5$, (d) $6b - 3c$, (e) $-8x - 4y + 36$, (f) $-5x^2 - 15x + 5y$