

## Lesson 11-4

**Example 1**

Find the product of  $(x + y)(3x + 5w)$ .

**Solution**

$$\begin{aligned}(x + y)(3x + 5w) &= x(3x + 5w) + y(3x + 5w) \\ &= 3x^2 + 5wx + 3xy + 5wy\end{aligned}$$

No further simplification is possible.

**Example 2**

**PACKAGING** The dimensions of the cover art for a new product is  $m + 6$  by  $m + 3$ . Find the area of the cover art. Expand and simplify  $(m + 6)(m + 3)$ .

**Solution**

$$\begin{aligned}(m + 6)(m + 3) &= m(m + 3) + 6(m + 3) \\ &= m^2 + 3m + 6m + 18 \\ &= m^2 + (3 + 6)m + 18 \\ &= m^2 + 9m + 18\end{aligned}$$

The area of the cover art is  $m^2 + 9m + 18$ .

**Example 3**

Expand and simplify  $(a + 4)(a - 4)$ .

**Solution**

$$\begin{array}{cccc} & \mathbf{F} & \mathbf{O} & \mathbf{I} & \mathbf{L} \\ & \square & \square & \square & \square \\ (a + 4)(a - 4) & = & a^2 - 4a + 4a - 16 \\ & = & a^2 - 16\end{array}$$