

Example 16**Self Tutor**Expand and simplify: **a** $(x + 4)(x + 5)$ **b** $(3x + 1)(4x - 3)$

a $(x + 4)(x + 5)$

$$= x \times x + x \times 5 + 4 \times x + 4 \times 5$$

$$= x^2 + 5x + 4x + 20$$

$$= x^2 + 9x + 20$$

b $(3x + 1)(4x - 3)$

$$= 3x \times 4x + 3x \times -3 + 1 \times 4x + 1 \times -3$$

$$= 12x^2 - 9x + 4x - 3$$

$$= 12x^2 - 5x - 3$$

Example 17**Self Tutor**Expand and simplify: **a** $(2x + 5)(2x - 5)$ **b** $(3x + 4)^2$

a $(2x + 5)(2x - 5)$

$$= 4x^2 - 10x + 10x - 25$$

$$= 4x^2 - 25$$

b $(3x + 4)^2$

$$= (3x + 4)(3x + 4)$$

$$= 9x^2 + 12x + 12x + 16$$

$$= 9x^2 + 24x + 16$$