

Example 14**Self Tutor**

Expand and simplify:

a $3(x + 5)$

b $4x(x - 2)$

c $-2x(x - 5)$

a
$$\begin{aligned} & 3(x + 5) \\ &= 3 \times x + 3 \times 5 \\ &= 3x + 15 \end{aligned}$$

b
$$\begin{aligned} & 4x(x - 2) \\ &= 4x \times x + 4x \times -2 \\ &= 4x^2 - 8x \end{aligned}$$

c
$$\begin{aligned} & -2x(x - 5) \\ &= -2x \times x + -2x \times -5 \\ &= -2x^2 + 10x \end{aligned}$$

Example 15**Self Tutor**

Expand and simplify:

a $3(4x + 1) + 2(3x - 4)$

b $x(3x + 2) - 4x(1 - x)$

a
$$\begin{aligned} & 3(4x + 1) + 2(3x - 4) \\ &= 12x + 3 + 6x - 8 \\ &= 18x - 5 \end{aligned}$$

b
$$\begin{aligned} & x(3x + 2) - 4x(1 - x) \\ &= 3x^2 + 2x - 4x + 4x^2 \\ &= 7x^2 - 2x \end{aligned}$$