

### 7.1 MULTIPLYING BINOMIALS

EXPAND

(1)  $(x+4)(x-6)$       (2)  $(2x-3)(3x-3)$

*(Note: A diagram shows the FOIL process for (1) with arrows: F from x to x, O from x to -6, I from 4 to x, L from 4 to -6.)*

$x^2 - 6x + 4x - 24$   
 $x^2 - 2x - 24$   
 $x(x-6) + 4(x-6)$   
 $x^2 - 6x + 4x - 24$   
 $x^2 - 2x - 24$

$6x^2 - 6x - 9x + 9$   
 $6x^2 - 15x + 9$

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### 7.2 COMMON FACTORING (GCF)

1) FACTOR

$\frac{14x-21}{7} = 7(2x-3)$        $\frac{8x^2-24x}{8x} = 8x(x-3)$

$1 \times 14$      $1 \times 21$   
 $2 \times 7$       $3 \times 7$

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### 7.3 Difference of Squares

$x^2 - 16$        $\sqrt{25x^2 - 36}$

$\sqrt{x^2} - \sqrt{16}$   
 $(x+4)(x-4)$   
 $x^2 + 4x - 4x - 16$   
 $x^2 - 16$

$(5x+6)(5x-6)$

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### 7.4 Factoring Trinomials

1)  $x^2 + 7x + 12$       2)  $x^2 - 7x + 6$

$4 \times 3 = 12$        $-1 \times -6 = 6$   
 $4 + 3 = 7$        $-1 + -6 = -7$

$(x+4)(x+3)$        $(x-1)(x-6)$

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## APPLICATION PROBLEMS

Determine an expression for the length and width of the rectangle below.

$$\text{Area} = x^2 + 7x - 18$$

$$x^2 + 7x - 18$$

$$\begin{array}{l} L \qquad \qquad \qquad W \\ (x+9)(x-2) \end{array} \quad \begin{array}{l} +9 \quad x-2 = -18 \\ +9 \quad + -2 = +7 \end{array}$$

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