

7.4 Factoring Trinomials page 306 - 311

$Ax^2 + Bx + C = 0$ is called a Quadratic Expression
 A, B and C are real numbers

A trinomial has 3 terms, we can factor(divide) most trinomials into 2 binomials.
 This is the opposite of multiplying the binomials you completed earlier in this chapter.

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To Factor a Trinomial;

Step 1 - Find two numbers that multiply to the last term(C)

Step 2 - The same two numbers must add to the middle term(B)

$$Ax^2 + Bx + C = 0$$

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Example - Factor

$$x^2 + 5x + 6 = (x + 2)(x + 3)$$

Find two numbers multiply to the last term (6)

Factors of 6 are; $1 \times 6 = 6$
 $2 \times 3 = 6$

_____ x _____ = 6

The same two numbers add to the middle term(5)

_____ + _____ = 5 $1 + 6 = 7$
 $2 + 3 = 5$

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Factor

$$x^2 + 7x + 10$$

_____ x _____ = 10 Factors of 10
 $1 \times 10 = 10$
 $2 \times 5 = 10$

_____ + _____ = 7 $1 + 10 = 11$
 $2 + 5 = 7$

(x +) (x +)

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Factor Factors of 8

$x^2 + 6x + 8$ $__ x __ = 8$ $1 \times 8 = 8$
 $2 \times 4 = 8$

$__ + __ = 6$ $1 + 8 = 9$
 $2 + 4 = 6$

$(x + \) (x + \)$

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Factor Factors of 27

$x^2 - 12x + 27$ $__ x __ = 27$ $-1 \times -27 = +27$
 $-3 \times -9 = +27$

$__ + __ = -12$ $-1 + -27 = -28$
 $-3 + -9 = -12$

$(x + \) (x + \)$

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Factor Factors of 27

$x^2 + 5x - 6$ $__ x __ = -6$ $-1 \times 6 = -6$
 $-2 \times 3 = -6$
 $-3 \times 2 = -6$
 $-6 \times 1 = -6$

$__ + __ = 5$ $-1 + 6 = +5$
 $-2 + 3 = +1$
 $-3 + 2 = -1$
 $-6 + 1 = -5$

$(x + \) (x + \)$

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Textbook Assignment - Algebra Tiles

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