



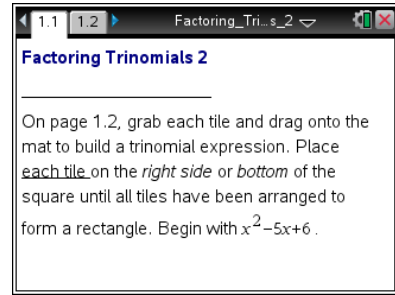
# Factoring Trinomials 2

## Student Activity

Name \_\_\_\_\_  
Class \_\_\_\_\_

Open the TI-Nspire document *Factoring Trinomials\_2*.

In the activity Factoring Trinomial Part 1, you used tiles to factor trinomials such as  $x^2 + 5x + 6$ . This activity will explore trinomials of the form  $x^2 + bx + c$ , where  $b$  is a negative integer and  $c$  is positive. One example is the trinomial  $x^2 - 5x + 6$ . Its factors are  $(x - 2)$  and  $(x - 3)$ .



Move to page 1.2.

Press **ctrl** **▶** and **ctrl** **◀** to navigate through the lesson.

Follow along as your teacher shows how to move the tiles to factor the trinomial  $x^2 - 5x + 6$ . The white tiles represent negative numbers. The darker tiles represent positive numbers.

Arrange the tiles to construct the trinomial  $x^2 - 3x + 2$ .

- a. Arrange the tiles to form a rectangle with area  $x^2 - 3x + 2$ .  
b. What are the dimensions of the rectangle?

Click the Reset box in the lower left portion of the screen.

- For each of the following, move the correct tiles to the mat.
  - Factor the trinomial  $x^2 - 7x + 6$  by arranging the tiles on page 1.3 to make a rectangle. Verify that your answer is correct by finding the product of the factors.
  - Three trinomials have the form  $x^2 + bx + c$  where  $-9 \leq b \leq -1$  and  $1 \leq c \leq 12$ . The large rectangle is a square. Find one of these trinomials. Show that the product of the sides of the square will produce this trinomial.
- Sali factored the trinomial  $x^2 - 6x + 6$ . His answer was  $(x - 4)(x - 2)$ . Tell whether he was correct or incorrect and why.



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4. a. Find the factors of each of the following trinomials.

Trinomial	Factored Form
$x^2 - 8x + 7$	
$x^2 - 11x + 18$	
$x^2 - 14x + 40$	
$x^2 - 26x + 48$	

- b. How can tell whether you have factored each trinomial correctly?
5. Suppose  $x^2 - bx + c = (x - m)(x - n)$ . How are  $m$  and  $n$  related to  $b$ ? How are they related to  $c$ ?
6. Compare the method used in this lesson with the one used to factor trinomials with all positive terms. Would the method from this lesson work on the trinomial  $x^2 + 2x - 8$ ? Explain.