

Name:

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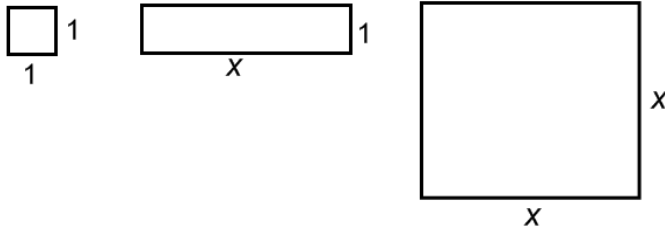
## Math Lab: Solving Quadratic Equations with Algebra Tiles

### Question

How can you use what you know about area to solve quadratic equations?

### Recall

Find the area of each rectangle given the dimensions. Color them to match the tiles.



### Investigate Factoring

Sketch the models you create for each example below. The  $x^2$  tile must be in the upper left corner.

Example 1:  $x^2+5x+6=0$

Sum	Product	Solve

Example 2:  $x^2+7x+12=0$

Sum	Product	Solve

Example 3:  $x^2+3x+2=0$

Sum	Product	Solve

Example 4:  $x^2-5x+6=0$

Sum	Product	Solve

Example 5:  $x^2-4x+4=0$

Sum	Product	Solve

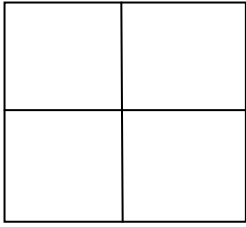
Example 6:  $x^2-6x+8=0$

Sum	Product	Solve

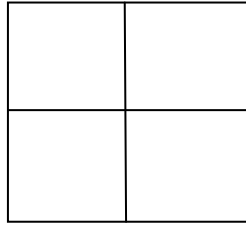
## Apply factoring

Solve each of the following by factoring (without the tiles).

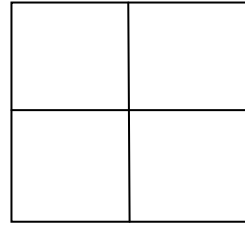
$$x^2+7x+6=0$$



$$x^2+8x+15=0$$



$$x^2-6x+5=0$$



## Will all quadratic equations factor?

The expression  $x^2+5x+1$  is not factorable. Use your algebra tiles to model the equation. Arrange the tiles in a rectangle. What do you notice?

1. Is the expression  $x^2+3x+4$  factorable? Explain.
2. Find another quadratic expression that is not factorable.