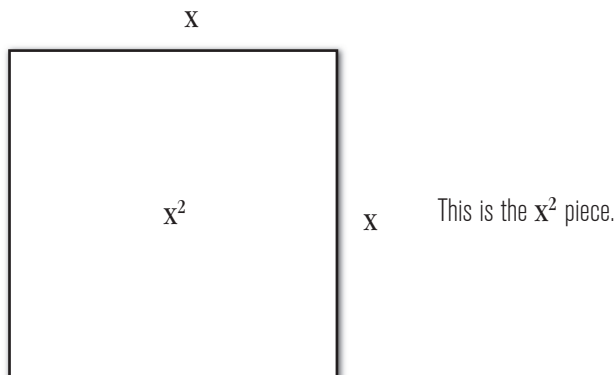
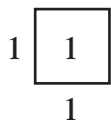


A variable, usually represented by a letter, is used to represent one or more numbers. If we let the variable  $x$  represent the length of the large blue square tile, then  $x^2$  represents the area of that tile.

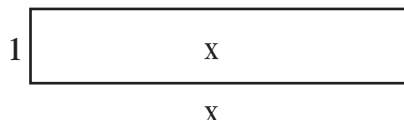


We name the Algebra Tile pieces by considering the area of each, meaning we need to know the dimensions of each piece. If the small yellow square has length 1 unit, the area of the small square is 1 square unit. Then the long green rectangle has dimensions 1 by  $x$  and has an area of  $x$  square units.

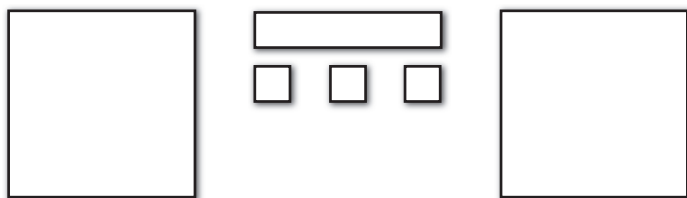
This is the unit piece.



This is the  $x$  piece.



We can use a collection of Algebra Tiles to model polynomials. The polynomial  $2x^2 + x + 3$  is modeled below.



Use the Algebra Tiles to represent each polynomial. Make a sketch of your model.

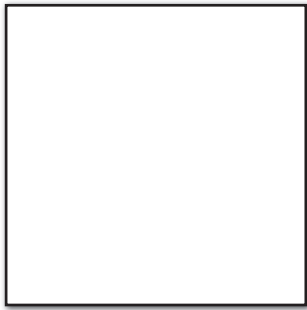
1.  $x^2 + 4x + 2$

2.  $3x^2 + 2x$

3. A binomial

4. A trinomial

The Algebra Tile pieces can be named using two different variables for the dimensions.



x

x

This is the  $x^2$  piece.



y

x

This is the  $xy$  piece.

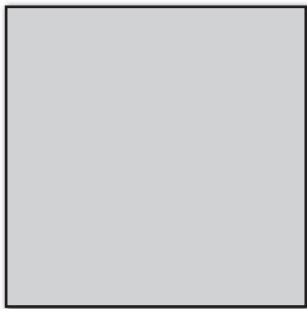


y

y

This is the  $y^2$  piece.

Negative signs can be assigned to each shaded tile to represent negative terms in a polynomial.



x

x

This is the  $-x^2$  piece.



y

x

This is the  $-xy$  piece.

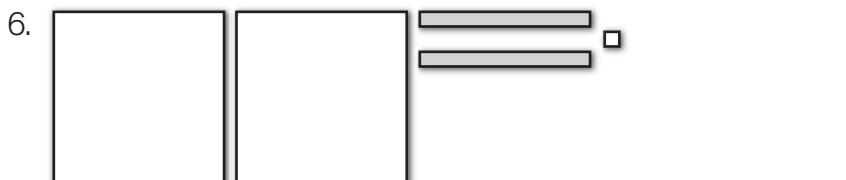
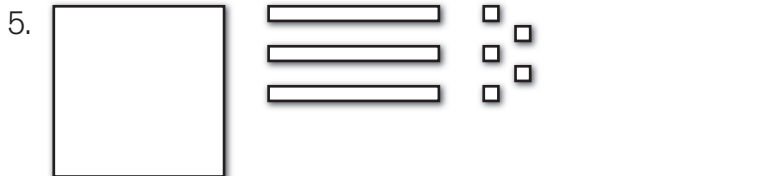


y

y

This is the  $-y^2$  piece.

Write the polynomial represented in each of the following.



8. Explain how you would name the Algebra Tile pieces in order to represent the polynomial

$4a^2 - 2ab + 2b^2$ . \_\_\_\_\_