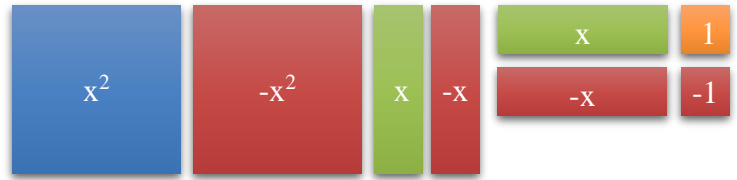


# Algebra Tiles

## Completing the Square

### Exploration



1. Find the number  $c$  that makes the trinomial a perfect square.  
 $x^2 - 2x + c$ .



2. Find the number  $c$  that makes  $x^2 - 6x + c$  a perfect square.



3. Predict the number  $c$  needed to make  $x^2 + 8x + c$  a perfect square trinomial.



4. What needs to be added to  $x^2 + 5x$  to make it a perfect square?

**Solve using square roots.**

1.  $d^2 + 30d + 225 = 121$

2.  $4x^2 - 24x + 36 = -490$

**Solve using square roots.**

3.  $x^2 + 4x + 4 = 25$

5.  $x^2 + 6x + 9 = -16$

4.  $r^2 - 40r + 400 = 300$

6.  $9x^2 + 6w + 1 = -18$

**Find the value of  $c$  that makes the expression a perfect square trinomial. Then write the expression as the square of a binomial.**

7.  $g^2 + 10g + c$

8.  $v^2 - 7v + c$

9.  $y^2 - 14y + c$

11.  $z^2 + 24z + c$

10.  $x^2 + 13x + c$

12.  $x^2 - 11x + c$

**Solve by completing the square.**

13.  $x^2 - 18x + 5 = 0$

14.  $y^2 - 3y + 8 = 0$

**Solve by completing the square.**

15.  $x^2 - 6x - 2 = 0$

16.  $x^2 - 5x - 8 = 0$