



# Constants in Quadratic Equations

Let's explore the constants in quadratic equations.

## 13.1 Math Talk: Halved and Squared

For each value of  $b$ , find  $\left(\frac{b}{2}\right)^2$  mentally.

- $b = 6$

- $b = \frac{1}{2}$

- $b = \frac{2}{5}$

- $b = 0.8$

## 13.2 Solving Quadratics with Perfect Squares

Solve each of these equations for all values of  $x$  that make the equation true.

1.  $(x + 2)^2 = 9$

2.  $\left(x - \frac{1}{2}\right)^2 = 4$

3.  $(x + 1)^2 = 8 + 1$



4.  $(x - \frac{1}{3})^2 = \frac{10}{9} - \frac{1}{9}$

5.  $(x - 6)(x - 6) = 81$

## 13.3 Make It a Perfect Square

For each expression:

- Find a value that could be added as a constant term to make each expression a perfect square.
- Add the value you found, and rewrite the expression in factored form.

1.  $x^2 + 20x$

2.  $x^2 - 4x$

3.  $x^2 - 2x$

4.  $x^2 + x$

5.  $x^2 + 5x$

6.  $x^2 + 1.4x$

