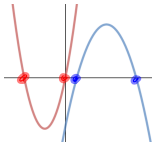
9.3 Solving Quadratic Equations

The BIG Idea...

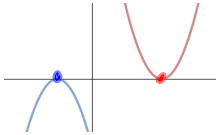
There are several ways to solve quadratics. Today we will focus on two: graphing and square roots.

Quadratic equations have solutions or roots.
Quadratic graphs have zeroes or x-intercepts.

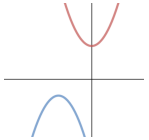
} These 4 terms are closely related and found in similar ways.



2 solutions



1 solution



no real solutions

Solve by graphing.

1) $x^2 - 81 = 0$

2) $x^2 + 12 = 0$

3) $x^2 + 7 = 7$

4) $5x^2 - 80 = 0$

Solving by square roots:

For any quadratic in the form $ax^2 - c = 0$, solve by isolating x^2 and then take the square root of each side of the equation. Remember, if $x^2 = c$, then $x = \pm\sqrt{c}$.

Solve by square roots.

5) $a^2 = 225$

6) $3w^2 - 8 = -8$

Solve by square roots.

7) $4x^2 = 4$

8) $16v^2 = 9$

9) $-4x^2 = 16$