

10.4-10.7 Study Guide
Study Guide Answer Key

10.4: Use Square Roots to Solve Quadratic Equations:

- Be able to solve a quadratic equation using square roots

Solve the following quadratic equations.

Ex: $4x^2 - 400 = 0$

$x = \pm 10$

Ex: $3z^2 - 18 = -18$

$z = 0$

Ex: $3x^2 - 35 = 45 - 2x^2$

$x = \pm 4$

Ex: $11\left(\frac{w-7}{2}\right)^2 - 20 = 101$

$w = 13.63$ and $w = 0.37$

10.6: Solve Quadratic Equations by the Quadratic Formula:

- Be able to solve quadratic equations by using the quadratic formula

Solve:

Ex: $x^2 + 5x - 104 = 0$

$x = 8$ and $x = -13$

Ex: $4t^2 - 3t = 5 - 3t^2$

$t = 1.09$ and $t = -0.66$

Ex: $x^2 - 8x = -16$

$x = 4$

Ex: $(x + 13)^2 = 25$

$x = -8$ and $x = -18$

10.7: Interpret the Discriminant:

- Be able to identify the value of the discriminant and use it to determine the number of solutions to a quadratic equation.

Tell whether the equation has *two solutions*, *one solution*, or *no solution*.

Ex: $x^2 + x + 1 = 0$

Discriminant = -3 , no solution

Ex: $-2x^2 + 8x - 4 = 0$

Discriminant = 32 , two solutions

Ex: $-3g^2 - 4g = \frac{4}{3}$

Discriminant = 0 , one solution

Ex: $10 = x^2 - 5x$

Discriminant = 65 , two solutions