

Algebra 2
Unit: Radical Functions
Section: Solving Radical Equations and Inequalities

Example: Solving Radical Equations

Problem

Solve the square root of the quantity s minus ten plus the square root of s is equal to two.

Solution

The first step is to separate the two square roots.

Square root of the quantity s minus ten is equal to two minus the square root of s .

Next square both sides of the equation.

Square root of the quantity s minus ten quantity squared is equal to two minus square root of s quantity squared.

Simplify both sides of the equation. Use FOIL to simplify the right side.
 s minus ten is equal to four minus four times square root of s plus s .

Subtract s from both sides of the equation.
Negative ten is equal to four minus four times square root of s .

Subtract four from both sides of the equation.
Negative fourteen is equal to negative four times square root of s .

Divide both sides by negative four.
Negative fourteen divided by negative four is equal to square root of s .

Simplify the fraction.
Seven halves is equal to square root of s .

Square both sides again.
Seven halves squared is equal to square root of s squared.

Simplify.
 s is equal to forty nine fourths.
Make sure to check your answer to all radical equation problems.
If you check your answer, you will see that it does not work in the original equation.
Therefore, this problem has no solution.