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Solve Rational and Radical Equations - Guided Lesson Explanation

Explanation#1

We have to solve for a variable, use inverse operations to undo the operations in the equation. Be sure to gather like terms and to do the same operation to both sides of the equation.

Solve for p

$\sqrt{(2p - 5)} = \sqrt{(3p)}$

$2p - 5 = 3p$ square both sides

$-5 = 3p - 2p$ subtract 2p from both sides

$-5 = 1p$ divide both sides by 1

$p = -5$

Explanation#2

We have to solve a rational equation, first clear the fractions, either by finding the cross products or by multiplying both sides by the lowest common denominator (LCD). Then solve for the variable.

$$\frac{6}{x+2} = \frac{-2}{x-4}$$

$6(x - 4) = -2(x + 2)$

$6x - 24 = -2x - 4$

$6x + 2x = -4 + 24$

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$8x = 20$

$x = \frac{20}{8}$

$x = \frac{5}{2}$

We have to check whether this is an extraneous solution.
Plugging $x = 5/2$ into the first denominator, $x + 2$, yields 2.
Plugging $x = 5/2$ into the second denominator, $x - 4$, yields -4.
Since neither denominator is 5/2, which would be undefined, this is a valid solution.

Explanation#3

We can just take the square root of both sides to cancel out the operations.

Solve for y

$\sqrt{y} = 0.5$

$(\sqrt{y})^2 = 0.5^2$

$a = 0.25$

So the solution is 0.25