

Mastery Alg 1 Lesson 11-5 Solving Rational Equations

Problem 4 Solving a Rational Proportion

What is the solution of $\frac{4}{x+2} = \frac{3}{x+1}$?

Got It? 4. Find the solution(s) of each equation. Check your solutions.

a. $\frac{3}{b+2} = \frac{5}{b-2}$

b. $\frac{c}{3} = \frac{7}{c-4}$

The process of solving a rational equation may give a solution that is extraneous because it makes a denominator in the original equation equal 0. An extraneous solution is a solution of an equation that is derived from the original equation, but is not a solution of the original equation itself. So you must check your solutions.

Problem 5 Checking to Find an Extraneous Solution

What is the solution of $\frac{6}{x+5} = \frac{x+3}{x+5}$?

Got It? 5. What is the solution of $\frac{x-4}{x^2-4} = \frac{-2}{x-2}$? Check your solution.

Solve each equation. Check your solutions!

1.
$$\frac{10}{6x+7} = \frac{6}{2x+9}$$

2.
$$\frac{-2}{p+3} = \frac{7}{7p}$$

3.
$$\frac{30}{y+3} = \frac{30}{y-3}$$

4.
$$\frac{-6}{4-d} = \frac{2}{d-2}$$

Scrambled answers, from smallest to largest: $-10, -7, -\frac{3}{2}, -1, 1, 3, 3, 4, 4, 5, 6, 10, \text{no solution}$

5. $\frac{5}{x+1} = \frac{x+2}{x+1}$

6. $\frac{4}{c+4} = \frac{c}{c+25}$

7. $\frac{3}{m-1} = \frac{2m}{m+4}$

Scrambled answers, from smallest to largest: $-10, -7, -\frac{3}{2}, -1, 1, 3, 3, 4, 4, 5, 6, 10, \text{no solution}$

8. $\frac{2x+4}{x-3} = \frac{3x}{x-3}$

9. $\frac{9}{x-2} = \frac{x+4}{3}$

10. $\frac{x+2}{x+4} = \frac{x-2}{x-1}$

Scrambled answers, from smallest to largest: $-10, -7, -\frac{3}{2}, -1, 1, 3, 3, 4, 4, 5, 6, 10, \text{no solution}$