

12-7 Solving Rational Equations.....#

Objectives

Solve rational equations.
Identify extraneous solutions.

Review: Solve each proportion.
(left page)

1. $\frac{x}{8} = \frac{12}{8}$
 $8x = 48$
 $\frac{8x}{8} = \frac{48}{8}$
 $2x = \frac{12}{2}$
 $x = 6$
X=6

2. $\frac{3}{9} = \frac{5}{m}$
 ~~$3m = 45$~~
 $3 = \frac{45}{3}$
m=15

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A **rational equation** is an equation that contains one or more rational expressions. If a rational equation is a proportion, it can be solved using the Cross Product Property.

$\frac{6y}{y-3} = \frac{2(y-3)}{7}$

$42 = 2y - 6$
 $+6$

 $48 = 2y$
 $\frac{48}{2} = \frac{2y}{2}$
Y=24

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Ex. Solve $\frac{5}{x-2} = \frac{3}{x}$. Check your answer.

$\frac{5}{x-2} = \frac{3}{x}$ Use cross products.
 $5x = (x-2)(3)$ Distribute 3 on the right side.
 $5x = 3x - 6$
 $2x = -6$ Subtract 3x from both sides.
 $x = -3$

Check

5	3
x-2	x
-3-2	-3
5	3
-5	-3
-1	-1

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When can you use cross products to solve a rational equation?

3. Solve $\frac{1}{n} = \frac{3}{n+4}$. Check your answer.

$n+4 = 3n$
 $-n$

 $4 = 2n$
 $\frac{4}{2} = \frac{2n}{2}$
n=2

4. Solve $\frac{5}{x+1} = \frac{2}{x}$. Check your answer.

$5x = 2x + 2$
 $-2x - 2x$
 $\frac{3x}{3} = \frac{2}{3}$ **X=2/3**

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Chapter 11 Review work:

Solve each equation. Check your answers.

1. $5\sqrt{x} = 40$ 2. $\sqrt{3x} = \sqrt{8x-11}$ 3. $\sqrt{20-x} = x$

Apr 12-10:00 AM

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1-7,25-28, 58-60

1. rational equation

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

$3x = 2x + 8$
 $-2x - 2x$
X=8

May 18-1:08 PM