

Chapter Check-up: Rational Equations

Lesson 8

Example 1. a. Solve the rational equation $\frac{4}{x} + \frac{5}{2} = -\frac{11}{x}$ algebraically.
State any restrictions on the variable.

$$\frac{4}{x} + \frac{5}{2} = -\frac{11}{x}$$

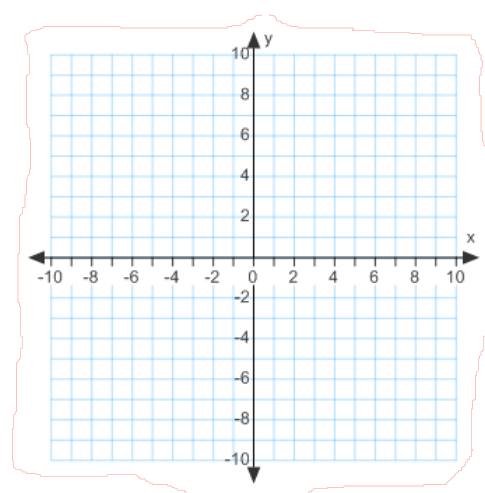
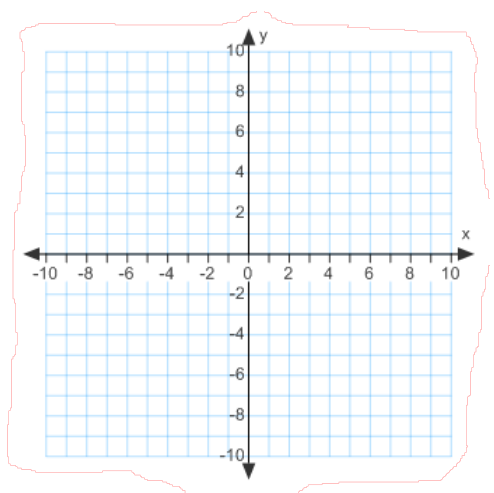
Verify your solution by substitution.
State the domain and range of the function.

b. Graph the function on your calculator using two different methods.
Sketch your solutions on the grids below.

Method I: $y_1 =$

Method II: $y_1 =$

$y_2 =$



Your Turn: Find the solution to $\frac{7}{x} + \frac{3}{4} = \frac{5}{x}$ both algebraically and graphically.

State the domain and range.

Algebraic solution:

$$\frac{7}{x} + \frac{3}{4} = \frac{5}{x}$$

Graphically:

$$y_1 =$$

or $y_1 =$

$$y_2 =$$

Compare the algebraic and graphical solution(s)

Example 2: Solve $\frac{3}{2x} - \frac{2x}{x+1} = -2$ graphically.

Verify your solution(s) algebraically.

$$\frac{3}{2x} - \frac{2x}{x+1} = -2$$

Compare the solutions that you obtained graphically and algebraically.
Which is more accurate?

Example 3: Solve $\frac{x}{x-1} - 2x = \frac{x+1}{2x-2}$ algebraically and graphically.

Determine any restrictions on the variable.

$$\frac{x}{x-1} - 2x = \frac{x+1}{2x-2}$$

Verify your solution(s)

Your Turn: Solve $x - 6 = \frac{x^2}{x+1}$ algebraically and graphically.

Determine any restrictions on the variable.

$$x - 6 = \frac{x^2}{x+1}$$

Verify your solution(s)

Example 4: Using a Rational Model.

From 1980 through 1997, the total prize money P (in millions of dollars) at Professional Rodeo Cowboys Association events can be modeled by

$$P = \frac{380t + 5}{-t^2 + 31t + 1}$$

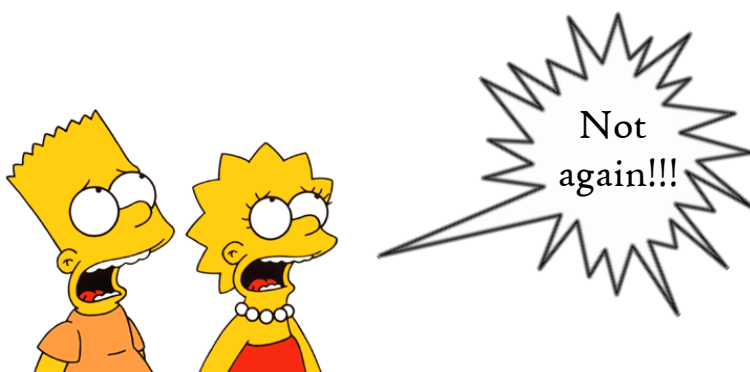
where t represents the number of years since 1980. During which year was the total prize money about \$20 000 000?

Try this one,

It takes a paddle boat 53 minutes to travel 5 km up a river and 5 km back, going at a steady speed of 12 km per hour with respect to still water. Find the speed of the current.

Quiz Time!!

Let's see what we know



Homework

1. Text Pages 468 - 469, Exercises # 1 - 10
2. **Quiz** - Rational Functions Chapter Checkup.



Rational Functions Formative Assessment Quiz 1.docx

Attachments

Translations Assignment 1.doc

Rational Functions Formative Assessment Quiz 1.docx