Math Virtual Learning

Algebra 2/Honors Algebra 2

May 21, 2020

Lesson: May 21, 2020

Objective/Learning Target:
Students will review rational functions.

# In the table below, click to review each topic:

|		
[Simplifying](#)	[Multiplying & Dividing](#)	[Adding & Subtracting](#)
[Solving](#)	[Graphing](#)	

Rational Functions Review:

On a sheet of paper, simplify or solve the following practice problems.

1. The sides of a triangle are given below. Find the rational expression for the perimeter of the triangle.

The triangle has sides labeled $\dfrac{x-2}{x+1}$, $\dfrac{2x+7}{x^2+x}$, and $\dfrac{3}{x}$.
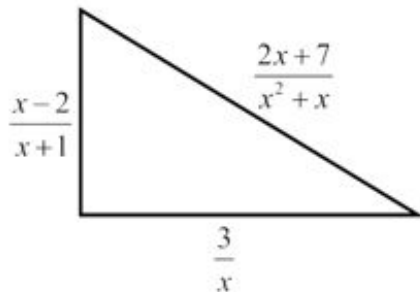
2. The dimensions of a rectangle are given below. Find the rational expression for the area of the rectangle.

The rectangle has dimensions $\dfrac{x^2-3x-40}{x-8}$ and $\dfrac{x+7}{7x+35}$.
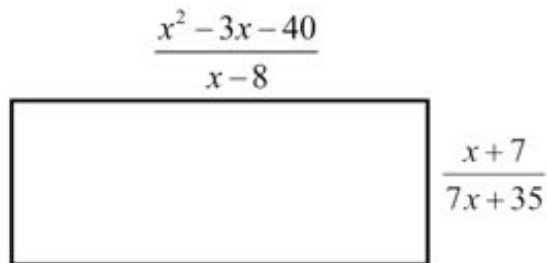
Rational Functions Review Continued:

3. The perimeter of the triangle below is $\frac{3x+5}{x+5}$. Two of the sides are labeled below. Find the rational expression for the length of the missing side.

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

$$\frac{4x^2-3x-1}{x^2+3x-10}$$
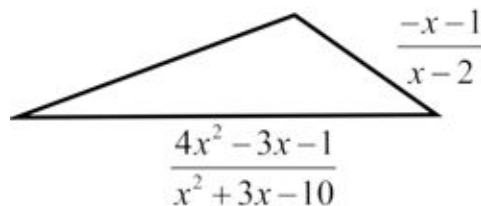
4. The area of the rectangle below is $\frac{x^2+3x-40}{x^2+2x-35}$. One side is labeled below. Find the rational expression for the length of the missing side.

$$\frac{x^2+2x-48}{x^2+3x-18}$$
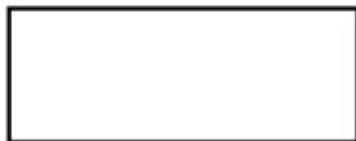
Rational Functions Review Continued:

5. Why can -7 and 4 not be solutions to the following rational equation?

$$\frac{4}{x} + \frac{x}{x^2 + 3x - 28} = -\frac{7}{x - 4}$$

Are there are other restricted solutions as well?

6. Write a rational equation that could have an extraneous solution of -5. Tell how you made your decision.

Use the formula $Distance = Rate \cdot Time$ to answer question 7.

7. Andrew walks a **Distance** modeled by $\frac{15k^5}{14k^2 j}$ to get to school at the **Time** modeled by $\frac{21k^3 j}{j^6}$.

What rational expression would model his **Rate**?

Rational Functions Review Answers:

1) $\dfrac{x^2+3x+10}{x(x+1)}$

2) $\dfrac{x+7}{7}$

3) $\dfrac{4}{(x+5)}$

4) $\dfrac{(x+6)(x-3)}{(x+7)(x-6)}$

5) -7 and 4 cannot be solutions because they are restricted in the domain. Other restricted values: $x \neq 0$

6) $\dfrac{x-1}{x+5} = \dfrac{x+3}{x-4}$ because (x + 5) is in the denominator, there is a restricted value $x \neq -5$.

7) $\dfrac{5j^4}{98}$

Additional Practice:

Click on the links below to get additional practice and to check your understanding!

Click on the link: <u>Rational Expressions website</u>

This site gives you examples and a video tutorial over each topic involving rational expressions and functions.