Inspiring Greatness

INDEPENDENCE SCHOOL DISTRICT

Math Virtual Learning

Algebra 2/Honors Algebra 2

April 27, 2020

Lesson: April 27, 2020

Objective/Learning Target:
Students will practice dividing rational expressions.

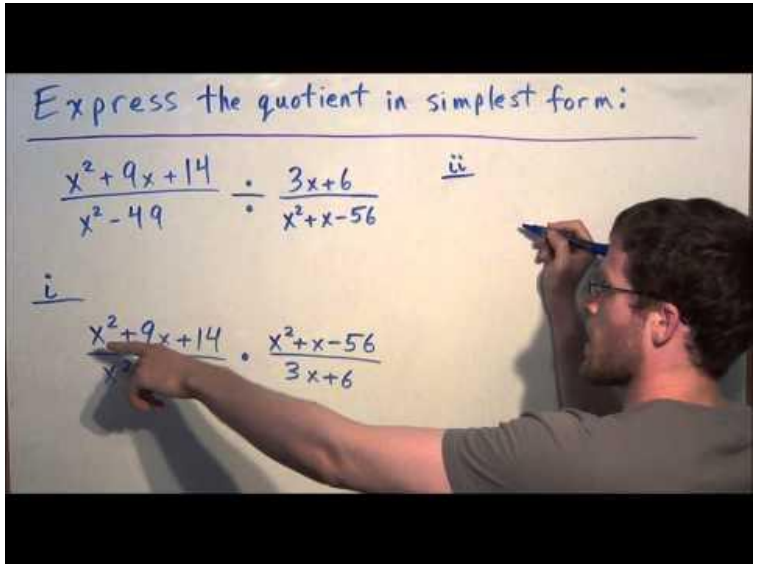
Let’s Get Started:

Get out a sheet of paper and simplify the following expression

$$\frac{4x+12}{16x^2} \div \frac{x^2-9}{x^2-x-6}$$

Click here to check your work

Let’s review.
Watch this video.



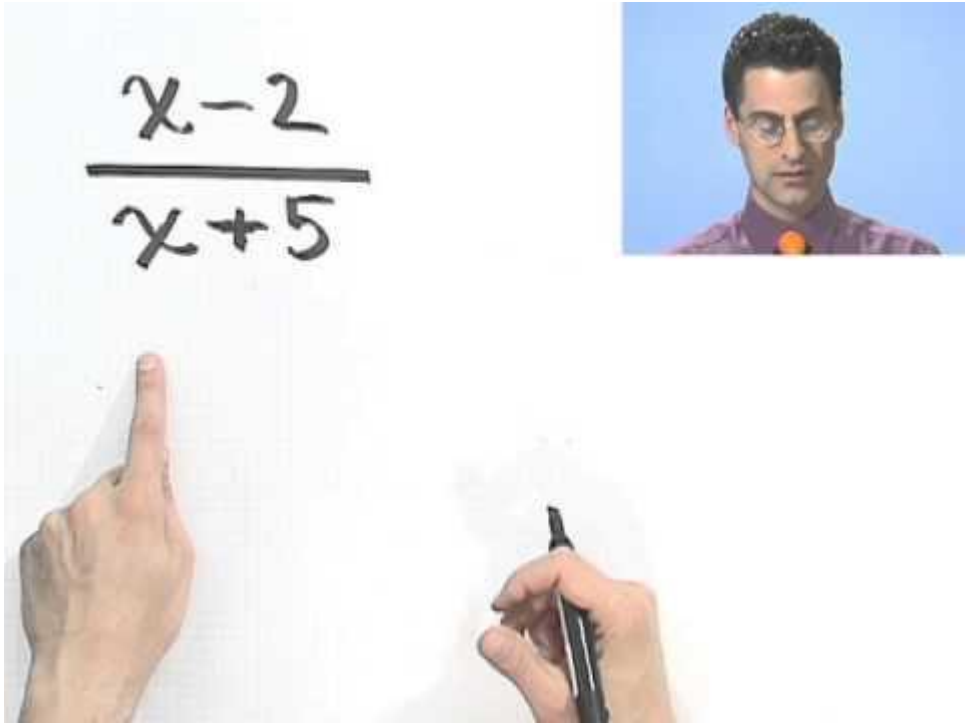
Notes to Remember:
Steps for Dividing Rational Expressions

(write this down)

- Factor everything
- Identify the domain (this is the restricted values for x)
- Flip the 2nd fraction and change the symbol to multiplication
- Re check the domain (you may now have new restricted values for x)
- Cancel (only if the factor is the same on the top and bottom)
- Write out the simplified answer (what is left after canceling)

What about that domain???

Remember that you cannot divide by zero. When you flip the second fraction, you must ***re check your domain***. Any number that would make the denominator zero needs to be excluded from the domain. We call these the restricted values. This video will help explain.



Divide Rational Expressions Practice:

On the same sheet of paper, divide/simplify the following practice problems and identify the domain.

1. $\frac{7}{18} \div \frac{6}{9a}$

2. $\frac{4n}{n-6} \div \frac{4n}{8n-48}$

3. $\frac{x-9}{(x-3)(x+3)} \div \frac{x-9}{5x^2(x+3)}$

4. $\frac{8(10-x)}{(x+1)(x-10)} \div \frac{x-8}{(x-8)(x+1)}$

5. $\frac{x^2+11x+24}{x^2-15x+56} \div \frac{x^2-x-12}{x^2-11x+28}$

6. $\frac{9x^2+12x+4}{4x^2-27x-7} \div \frac{12x^2+5x-2}{16x^2-1}$

Answer Key:

Once you have completed the problems, check your answers here.

1. $\frac{7}{18} \div \frac{6}{9a} = \frac{7a}{12}$ *Domain*: $a \neq 0$

2. $\frac{4n}{n-6} \div \frac{4n}{8n-48} = 8$ *Domain*: $n \neq 0,\ 6$

3. $\frac{x-9}{(x-3)(x+3)} \div \frac{x-9}{5x^2(x+3)} = \frac{5x^2}{x-3}$ *Domain*: $x \neq -3,\ 0,\ 3,\ 9$

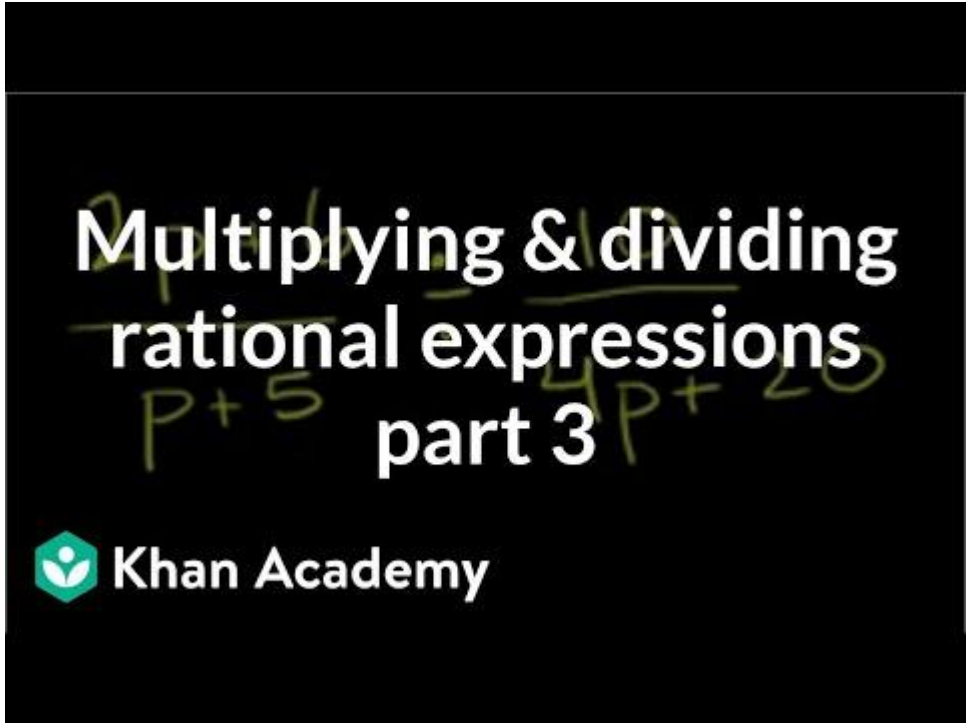
4. $\frac{8(10-x)}{(x+1)(x-10)} \div \frac{x-8}{(x-8)(x+1)} = -8$ *Domain*: $x \neq -1,\ 8,\ 10$

5. $\frac{x^2+11x+24}{x^2-15x+56} \div \frac{x^2-x-12}{x^2-11x+28} = \frac{x+8}{x-8}$ *Domain*: $x \neq -3,\ 4,\ 7,\ 8$

6. $\frac{9x^2+12x+4}{4x^2-27x-7} \div \frac{12x^2+5x-2}{16x^2-1} = \frac{3x+2}{x-7}$ *Domain*: $x \neq -\frac{2}{3},\ -\frac{1}{4},\ \frac{1}{4},\ 7$

Additional Practice:

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



Dividing Rational Expressions Practice - worksheet and answers