## Math Virtual Learning

## Algebra 2/Honors Algebra 2

May 1, 2020

Lesson: May 1, 2020

## Objective/Learning Target:

## Students will practice adding and subtracting rational expressions.

## Let's Review:

Get out a sheet of paper and watch the 2 videos for adding and subtracting rational expressions.

$$
\frac{9 x^{2}+3}{14 x^{2}-9}-\frac{-3 x^{2}+5}{14 x^{2}-9}=
$$

$\qquad$

Unlike Denominators:

$$
\frac{-5 x}{8 x+7}+\frac{-6 x^{3}}{3 x+1}=\frac{-5 x(3 x+1)}{(8 x+7)(3 x+1)}+\frac{(8 x+7)\left(-6 x^{3}\right)}{(8 x+7)(3 x+1)}
$$

Unike Denominators:

$$
(8 x+7)(3 x+1)
$$

## Steps for Adding and Subtracting Rational Expressions:

Like Denominators:

- Identify the Least Common Denominator (LCD)
- Identify the domain (this is the restricted values for x )
- Combine like terms in the numerator
- Factor and simplify if possible

Write this down if you need to!
Ask yourself, why are there extra steps when the denominators are not the same?

## Unlike Denominators:

- Factor the denominators
- Identify the Least Common

Denominator (LCD)

- Identify the domain (this is the restricted values for x )
- Multiply each term by what it is missing from the LCD
- Combine like terms in the numerator
- Factor and simplify if possible


## Add and Subtract Rational Expressions Practice:

On the same sheet of paper, add/subtract the following practice problems.


Once you have completed the problems, click here to check your answers!

## 1) $\frac{8 d^{2}-7 c^{2}}{2 d^{3} c^{3}}-\frac{8 d^{2}+8 c^{2}}{2 d^{3} c^{3}}$

2) $\frac{3 b^{2}-4 n^{2}}{4 b^{3}}-\frac{8 b^{2}+2 n^{2}}{4 b^{3}}$
3) $\frac{7 g+9}{4 g^{6}+17 g}-\frac{3 g+3}{4 g^{6}+17 g}$
4) $\frac{6 r^{3}-8}{8 r^{6}-17}-\frac{2 r^{3}}{8 r^{6}-17}$
5) $\frac{2 z^{2}-3 q^{2}}{7 z^{5} q^{5}}+\frac{2 z^{2}+8 q^{2}}{7 z^{5} q^{5}}$
6) $\frac{5 h-5}{6 h^{3}-15 h}+\frac{4 h+9}{6 h^{3}-15 h}$
7) $\frac{7 y+8 h}{4 y^{3}}+\frac{8 y+9 h}{4 y^{3}}$
8) $\frac{5 q^{2}-4}{8 q^{6}-7}+\frac{6 q^{2}}{8 q^{6}-7}$
9) $\frac{x}{6}+\frac{7 x+5}{x+7}$
10) $\frac{k}{9}-\frac{4 \mathrm{k}+6}{\mathrm{k}+1}$

## Additional Practice:

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

Rational Expressions - Add \& Subtract: Notes, Practice Worksheet, Answer Key

Adding and Subtracting Rational Expressions: Practice Worksheet and Answer Key

