

Notes and Examples**Simplifying Fractional Products**

Cross Canceling

Finding the product of two or more fractions involves multiplying numerators and denominators. We know that multiplying numbers can get big fast.

For example...

$$\frac{12}{24} \cdot \frac{9}{27} =$$

We would then need to divide by common factors to simplify.

In math, it is sometimes very helpful to simplify fractions as much as possible **BEFORE** multiplying in order to keep our final answers easier to understand and to simplify.

Try simplifying ...**FIRST**. Take out common factors from one, or both fractions.

$$\frac{12}{24} \cdot \frac{9}{27} =$$

$$\text{or... } \frac{12}{24} \cdot \frac{9}{27} =$$

You can always cross cancel a fractional product as long as you are taking one common factor from a numerator and one common factor from a denominator. You are really just simplifying out factors of 1.

Take this fractional multiplication problem:

$$\frac{30}{35} \cdot \frac{18}{20} = \frac{2 \cdot 3 \cdot 5}{5 \cdot 7} \cdot \frac{2 \cdot 3 \cdot 3}{2 \cdot 2 \cdot 5} = \frac{2 \cdot 2 \cdot 5 \cdot 3 \cdot 3 \cdot 3}{2 \cdot 2 \cdot 5 \cdot 5 \cdot 7} =$$



We can break the numerators and denominators into products of prime numbers

We can change the order of factors and then cancel out factors/fractions of 1.

This can help us multiply fractions quicker, and make simplifying much easier.

Name _____

Math 6

Period _____

2

Sheet 2, 3 or 4 Problem # _____

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Name _____

Math 6

Period _____

2 Explain Everything

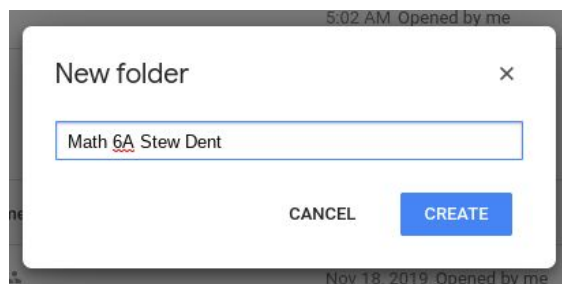
Topic: Cross Canceling

Design an explain everything project that explains how cross canceling can help make multiplying fractions easier.

Make sure that you...

- Choose or make your own multiplication problem with fractions. It must have at least two fractions.
- Make sure that your example has at least two common factors that can be cancelled
- Make sure that you compare finding the answer with cross canceling to finding it without cross canceling.
 - Find the answer **with** cross canceling
 - Find the answer **without** cross canceling
 - Compare both methods
- Place in a SHARED folder with Mr. Millard. The shared folder should be named exactly like this:

Math (space) 6 then math period (space) First name (space) Last name



- I have completed these tasks. Signed _____

Option 2: You make a one page note sheet on cross canceling using 1 sheet of paper Follow the guidelines listed above. Paper may be white, lined or graph. Best Work!