

How do we Multiply?

1. Factor (if needed)
2. Find the excluded values (where bottom=0)
3. Cancel out factors on top that match factors on bottom.
4. Write what is left on top and what is left on bottom.

How do we Divide?

1. Factor (if needed)
2. Find excluded values (where bottom = 0)
3. Keep, Change, Flip
4. Find excluded values (where bottom = 0)
5. Cancel out factors on top that match factors on bottom.
6. Write what is left on top and what is left on bottom.

How do we Add?

1. Find the Least Common Denominator (LCD)
2. Check excluded values (where $LCD = 0$)
3. Get denominators the same by multiplying top/bottom of fractions by what is missing from denominator.
4. Add across the top.

How do we Subtract?

1. Find the Least Common Denominator (LCD)
2. Check excluded values (where $LCD = 0$)
3. Get denominators the same by multiplying top/bottom of fractions by what is missing from denominator.
4. Subtract across the top by distributing the negative to the second fraction. (Change the signs)

How do we solve with "Cross-Multiplying?"

*Use when one fraction = one fraction

1. Find the excluded values
2. Multiply denominators to opposite fractions
3. Solve for x
4. Check extraneous solutions

How do we solve with "Kill the Denominator?"

*Use if there is more than one fraction on the same side

1. Find the excluded values
2. Find the LCD
3. Multiply EVERY fraction by LCD
4. Kill the Denominator (Cancel out factors)
5. Solve for x
6. Check the extraneous solutions

**If there is an x^2 , move everything to the same side as the x^2 , then factor and solve.

**If there are only x's with no exponents, move x's to same side and all numbers to the other side.