FRACTIONS

To add/subtract like fractions
(fractions w/ the same denominator)
1. Add/subtract the numerators (the # on the top)
2. Use the same denominator in the problem in the answer
3. Reduce to put in simplest form

\[
\frac{3}{10} + \frac{2}{10} = \frac{5}{10} = \frac{1 \times 5}{2 \times 5} = \frac{1}{2}
\]

To add/subtract unlike fractions
(fractions w/ different denominators)
1. To add/subtract unlike fractions, you must change them to like fractions
2. To do this you, you must find a common denominator
3. The easiest way to find a common denominator is to multiply them together
4. Then, multiply each numerator by the same thing as the denominator
5. Finally, add the two fractions together as above

\[
\frac{3}{6} + \frac{1}{4} = \frac{3 \times 4}{6 \times 4} + \frac{1 \times 6}{4 \times 6} = \frac{12}{24} + \frac{6}{24} = \frac{18}{24} = \frac{2 \times 3 \times 3}{2 \times 2 \times 3} = \frac{3}{4}
\]

To multiply fractions
1. Multiply the numerators
2. Multiply the denominators
3. Reduce to put into simplest form
* you do not have to find a common denominator, just multiply across

\[
\frac{5}{6} \times \frac{4}{5} = \frac{20}{30} = \frac{2 \times 2 \times 5}{2 \times 3 \times 5} = \frac{2}{3}
\]

To divide fractions
1. Change the operation sign to multiplication and change the second fraction (the divisor) to its reciprocal
   - In other words, change the sign and flip the numbers on the second fraction
2. Follow the rules for multiplying fractions
3. Reduce to put in simplest form

\[
\frac{4}{7} \div \frac{2}{3} = \frac{4 \times 3}{2 \times 7} = \frac{12}{14} = \frac{2 \times 2 \times 3}{2 \times 7} = \frac{6}{7}
\]