ANOKA-RAMSEY
COMMUNITY COLLEGE
Math Skills Center

Fraction Rules

Addition and Subtraction

When both fractions have the same denominators, you can add up both numerators and keep the same denominator.

$$\frac{2}{5}+\frac{1}{5}=\frac{2+1}{5}=\frac{3}{5}$$

$$\frac{2}{5}-\frac{1}{5}=\frac{2-1}{5}=\frac{1}{5}$$

When they have different denominators, we have to find a ***common denominator***. You have to find a number to multiply by to make the denominators the same, and then multiply by the same number in the numerator too.

$$\frac{2}{5}+\frac{2}{3}=\frac{2*3}{5*3}+\frac{2*5}{3*5}=\frac{6}{15}+\frac{10}{15}=\frac{16}{15}$$

Multiplication

Just multiply straight across.

$$\frac{2}{5}*\frac{2}{3}=\frac{2*2}{5*3}=\frac{4}{15}$$

Division

Change division into multiplication:
Take the reciprocal of the second fraction, then multiply.

$$\frac{2}{5}\div\frac{3}{4}=\frac{2}{5}*\frac{4}{3}=\frac{8}{15}$$

ANOKA-RAMSEY
COMMUNITY COLLEGE

Math Skills Center
Room: L122 (under the Library)
763-433-1260

Exponentiation

Raise each factor to the power of the exponent independently.

$$\left(\frac{2x}{5}\right)^2=\frac{2^2x^2}{5^2}$$

Reducing Fractions

First factor the numerator and denominator, then cancel common factors from the numerator and denominator of the fraction.

$$\frac{260}{182}=\frac{\cancel{2}*2*5*\cancel{13}}{\cancel{2}*7*\cancel{13}}=\frac{2*5}{7}=\frac{10}{7}$$

Complex Fractions

Multiply the top and bottom of the large fraction by the least common denominator of the smaller fractions.

$$\frac{\frac{1}{2}+\frac{3}{4}}{\frac{3}{5}+\frac{3}{2}}=\frac{\frac{1}{2}+\frac{3}{4}}{\frac{3}{5}+\frac{3}{2}}*\frac{20}{20}=\frac{10+15}{12+30}=\frac{25}{42}$$