Combining Fractions – Part 1

Multiplying Fractions

Step 1 – Multiply the numerator and denominator of both fractions and then divide by the greatest common factor which happens to be 2 in the following example

Step 2 – Write answers in simplest form

Example

$$\frac{6}{11} \times \frac{7}{8} = \frac{6 \times 7}{11 \times 8} = \frac{42 \div 2}{88 \div 2} = \frac{21}{44}$$

Finding the Reciprocal

To find the reciprocal of a fraction, you have to switch the numerator and denominator of the original fraction.

Examples

The reciprocal of $\frac{4}{5}$ is $\frac{5}{4}$

The reciprocal of $\frac{9}{6}$ is $\frac{6}{9}$

Dividing Fractions

Use the reciprocal of the second term which lets you change your division problem into a multiplication problem and then you multiply both numerators and denominators.

Example

$$\frac{2}{3} \div \frac{3}{5}$$

$$= \frac{2}{3} \times \frac{5}{3}$$

$$= \frac{10}{9}$$

Multiplying Mixed Numbers

Step 1 – First, you have to change each mixed number into an improper fraction

Step 2 – Multiply the numerator and denominator of both fractions

Step 3 – Then, simplify the answer

Example

$$1\frac{3}{5} \times 2\frac{1}{3}$$

$$= \frac{8}{5} \times \frac{7}{3}$$

$$= \frac{7 \times 8}{5 \times 3}$$

$$= \frac{56}{15} \rightarrow 3\frac{11}{15}$$

Adding Like Fractions

If all fractions, have the same denominators, you just add the numerators and place it over the denominator. Simplify the answer if possible.

Example

$$\frac{3}{4} + \frac{3}{4} + \frac{5}{4}$$

$$= \frac{3 + 3 + 5}{4}$$

$$= \frac{11}{4} \rightarrow 2\frac{3}{4}$$

Subtracting Like Fractions

Subtract numerators and keep the same denominator. Simplify the answer if possible.

Example

$$\frac{5}{6} - \frac{2}{6}$$

$$= \frac{5 - 2}{6}$$

$$= \frac{3}{6} = \frac{1}{2}$$