Adding Fractions

Process for Adding Fractions

1. Find a common denominator using the LCM of the denominators
2. Find equivalent fractions by multiplying numerator and denominator by same factor
3. Add the numerators
4. Simplify if possible

Example: $\frac{2}{3}+\frac{3}{4}$

Step 1: LCM (3, 4)

3: 3, 6, 9, 12, 15, 18, … Select the first multiple that is in both lists.

4: 4, 8, 12, 16, …

Step 2: Find equivalent fraction by multiplying numerator and denominator by the same factor

$\frac{2}{3}\cdot\frac{4}{4}=\frac{8}{12}$

Why did I multiply by $\frac{4}{4}$?

Because my LCM was 12 and I have to multiply 3 by 4 to get the LCM of 12. Then, since I multiplied the denominator by 4 I do the same to the numerator so that I don't change the value of the fraction.

$\frac{3}{4}\cdot\frac{3}{3}=\frac{9}{12}$ Again I multiplied by this fraction to get the LCM and not change the value of the fraction.

Step 3: Add the numerators

$$\frac{2}{3}+\frac{3}{4}=\frac{8}{12}+\frac{9}{12}=\frac{17}{12}$$

Step 4: Simplify if possible

$\frac{17}{12}$ cannot be reduced as there are no common factors between 12 and 17 but it is an improper fraction.

Dividing 12 into 17.

$\frac{17}{12}=1\frac{5}{12}$