Adding Fractions

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The Basic Steps

- 1. Check to see if the denominators are the same.

  - If they are – add numerators, keep same denominator

  - If they are not – make equivalent fractions then add

- 2. Add whole numbers

- 3. Simplify/Reduce/Put in Lowest terms

Example 1 – Adding

$$\frac{1}{4} + \frac{2}{4} = \frac{3}{4}$$

The denominators are the same.

Add numerators (1 + 2) = 3

Keep denominator.

Example 2 – Adding

$$\frac{2}{4} + \frac{2}{4} = \frac{4}{4} = 1$$

The denominators are the same.

Add numerators (2 + 2) = 4

Keep denominator.

Simplify. (4/4 = 1 whole)

Example 3 - Adding

$$\frac{1}{4} + \frac{1}{5} =$$

The denominators are not the same.

Make equivalent fractions so that both denominators are the same.

Example 3 - Adding

$$\frac{1}{4} \ + \ \frac{1}{5} \ =$$

Two ways to find a common denominator:

1) List the multiples of 4 and 5. Use the lowest multiple found in both lists. (LCM)

   4: 4, 8, 16, 20, 24, 28, 32

   5: 5, 10, 15, 20, 25, 30

2) Multiply the denominators together.

   4 x 5 = 20

Example 3 - Adding

1. Set up the fractions to equal the new denominator.
2. When you change the denominator, you must also change the numerator by multiplying it by the same factor.
   ("What ever you do to the bottom, do to the top")

$$\frac{1 \; \times 5}{4 \; \times 5} = \frac{5}{20}$$

$$\frac{1 \; \times 4}{5 \; \times 4} = \frac{4}{20}$$

Example 3 - Adding

- Now that the denominators are the same. Add numerators.
- Check to see if you can simply after adding!

$$\frac{5}{20} + \frac{4}{20} = \frac{9}{20}$$

$$\frac{1}{4} + \frac{1}{5} = \frac{9}{20}$$