Subtracting Fractions

Subtracting fractions is easy when you have common denominators.

x ← The number on the top is the "numerator."

y ← The number on the bottom is the "denominator."

Example: $\frac{3}{4} - \frac{1}{4} = ?$

The denominator in both numbers is 4. All we have to do is subtract the numerators.

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

For each problem below, follow the steps used in the example to find your solution.
Be sure to reduce your fraction to its lowest terms.

1) $\frac{4}{8} - \frac{1}{8} = ?$

$$\frac{4-1}{8} = \frac{3}{8}$$

2) $\frac{5}{10} - \frac{3}{10} = ?$

$$\frac{5-3}{10} = \frac{2}{10} = \frac{1}{5}$$

3) $\frac{9}{12} - \frac{6}{12} = ?$

$$\frac{9-6}{12} = \frac{3}{12} = \frac{1}{4}$$

4) $\frac{8}{15} - \frac{3}{15} = ?$

$$\frac{8-3}{15} = \frac{5}{15} = \frac{1}{3}$$

5) $\frac{15}{25} - \frac{10}{25} = ?$

$$\frac{15-10}{25} = \frac{5}{25} = \frac{1}{5}$$

6) $\frac{25}{50} - \frac{5}{50} = ?$

$$\frac{25-5}{50} = \frac{20}{50} = \frac{2}{5}$$

7) $\frac{9}{63} - \frac{6}{63} = ?$

$$\frac{9-6}{63} = \frac{3}{63} = \frac{1}{21}$$

8) $\frac{30}{100} - \frac{20}{100} = ?$

$$\frac{30-20}{100} = \frac{10}{100} = \frac{1}{10}$$

Subtracting Fractions

Let's learn subtracting fractions with uncommon denominators!

-If you want to subtract two fractions together, both fractions must have the same or "common" denominator.

-A common denominator is a shared multiple of the denominators in two or more fractions.

Example: $\dfrac{2}{3} - \dfrac{1}{9} = ?$

-The first step in solving this equation is to find the common denominator.

-3 is a multiple of 9; 3 x 3 = 9. We have found our common denominator, which is 9.

-If we multiply the denominator by 3, we must multiply the numerator by 3 as well.

-Our new equation and result will look like this:

$$\dfrac{3 \times 2}{3 \times 3} - \dfrac{3}{9} = \dfrac{6}{9} - \dfrac{3}{9} = \dfrac{3}{9} = \dfrac{1}{3}$$

For each problem below, follow the steps used in the example to find your solution.
Be sure to reduce your fraction to its lowest terms.

1) $\dfrac{2}{4} - \dfrac{2}{5} = ?$ $\dfrac{5 \times 2}{5 \times 4} - \dfrac{2 \times 4}{5 \times 4}$

$\dfrac{10}{20} - \dfrac{8}{20} = \dfrac{2}{20} = \dfrac{1}{10}$

5) $\dfrac{28}{25} - \dfrac{5}{5} = ?$ $\dfrac{7}{25} - \dfrac{5 \times 5}{5 \times 5}$

$\dfrac{28}{25} - \dfrac{25}{25} = \dfrac{3}{25}$

2) $\dfrac{2}{3} - \dfrac{3}{6} = ?$ $\dfrac{2 \times 2}{2 \times 3} - \dfrac{3}{6}$

$\dfrac{4}{6} - \dfrac{3}{6} = \dfrac{1}{6}$

6) $\dfrac{6}{6} - \dfrac{1}{9} = ?$ $\dfrac{3 \times 6}{3 \times 6} - \dfrac{1 \times 2}{9 \times 2}$

$\dfrac{18}{18} - \dfrac{2}{18} = \dfrac{16}{18} = \dfrac{8}{9}$

3) $\dfrac{4}{10} - \dfrac{3}{8} = ?$ $\dfrac{8 \times 4}{8 \times 10} - \dfrac{3 \times 10}{8 \times 10}$

$\dfrac{32}{80} - \dfrac{30}{80} = \dfrac{2}{80} = \dfrac{1}{40}$

7) $\dfrac{10}{30} - \dfrac{3}{10} = ?$ $\dfrac{10}{30} - \dfrac{3 \times 3}{10 \times 3}$

$\dfrac{10}{30} - \dfrac{9}{30} = \dfrac{1}{30}$

4) $\dfrac{16}{15} - \dfrac{4}{5} = ?$ $\dfrac{16}{15} - \dfrac{4 \times 3}{5 \times 3}$

$\dfrac{16}{15} - \dfrac{12}{15} = \dfrac{4}{15}$

8) $\dfrac{4}{8} - \dfrac{1}{2} = ?$ $\dfrac{4}{8} - \dfrac{1 \times 4}{2 \times 4}$

$\dfrac{4}{8} - \dfrac{4}{8} = \dfrac{0}{8} = 0$