

Solving Fractions

Created: Friday, 22 July 2011 10:21 | Published: Friday, 22 July 2011 10:21 | Written by [Super User](#) | [Print](#)

Addition and Subtraction of fractions



Addition and Subtraction of fractions - In order to [add like fractions](#) or [subtract like](#)

[fractions](#), we add or subtract their numerators and retain the common denominator.

For example: $5 + 2 = 7$

$$\frac{5}{8} + \frac{2}{8} = \frac{7}{8}$$

Now to [add unlike fractions](#) or [subtract unlike fractions](#), we follow the following steps:

- Obtain the fractions and their denominators.
- Find the [Least Common Multiple](#) (LCM) of the denominators.
- Convert each fraction into an equivalent fraction having its denominator equal to the LCM obtained in previous step.
- Add or subtract like fractions obtained.

For example, $7 + 2$

$$\frac{7}{10} + \frac{2}{15}$$

LCM of 10 and 15 is $(5 \times 2 \times 3) = 30$

So, we convert the given fractions into equivalent fractions with denominator at or 30.

We have, $7 = 7 \times 3 = 21$ and $2 = 2 \times 2 = 4$
 $\frac{7}{10} = \frac{21}{10 \times 3} = \frac{21}{30}$ $\frac{2}{15} = \frac{4}{15 \times 2} = \frac{4}{30}$

$$\frac{7}{10} + \frac{2}{15} = \frac{21}{30} + \frac{4}{30} = \frac{25}{30} = \frac{5}{6}$$

Example 2: Simplify-

$$15 - 11$$

$$\frac{15}{16} - \frac{11}{12}$$

LCM of 16 and 12 = $(4 \times 4 \times 3) = 48$

$$\frac{15}{16} - \frac{11}{12} = \frac{15 \times 3}{16 \times 3} - \frac{11 \times 4}{12 \times 4} = \frac{45}{48} - \frac{44}{48} = \frac{1}{48}$$

Try the following yourself:

1. Add: +

(Answer: 1)

2. Add: +

(Answer:)

3. Subtract: -

(Answer:)

4. Subtract: -

(Answer:)

Multiplication and Division of fractions

Multiplication of fractions - To [multiply fraction](#) we use the following formula:

[Product of two fractions](#) = $\frac{\text{Product of their numerators}}{\text{Product of their denominators}}$

For example: $\frac{3}{7} \times \frac{4}{5} = \frac{3 \times 4}{7 \times 5} = \frac{12}{35}$

Try yourself:

1. Multiply: $\times$

(Answer:)

2. Multiply: $\times$

(Answer:)

Division of fractions – The [division](#) of $\frac{a}{b}$ by a non-zero fraction $\frac{c}{d}$ is defined as the product of $\frac{a}{b}$ with the multiplicative inverse or reciprocal of $\frac{c}{d}$.

$\frac{a}{b} \div \frac{c}{d} = \frac{a}{b} \times \frac{d}{c}$

$\frac{b}{d} \div \frac{b}{c} = \frac{b}{d} \times \frac{c}{b}$

For example: $\frac{3}{5} \div \frac{9}{5} = \frac{3}{5} \times \frac{5}{9} = \frac{3 \times 5}{5 \times 9} = \frac{1}{3}$

Try yourself:

1. Divide: $\div$

(Answer: 1)

2. Divide: $\div$

(Answer:)

Now try it yourself! Should you still need any help, [click here](#) to schedule live online session with e Tutor!

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Reference Links:

- <http://www.aaamath.com/fra57ax2.htm>
- <http://www.aaamath.com/fra57bx2.htm>
- <http://www.youtube.com/watch?v=MEo0rSZ4O3w>
- http://www.youtube.com/watch?v=T8Lo_cOW0As&feature=related
- http://en.wikipedia.org/wiki/Least_common_multiple
- <http://www.aaamath.com/fra66mx2.htm>
- <http://www.youtube.com/watch?v=fCzBRpqvA6k&feature=related>
- <http://www.aaamath.com/fra66px2.htm>

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