

**Multiplication of fractions**

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Multiplication of a Fraction by a Whole Number

To multiply a whole number with a proper or an improper fraction, we multiply the whole number with the numerator of the fraction, keeping the denominator same.

To multiply a mixed fraction to a whole number, first convert the mixed fraction to an improper fraction and then multiply.

Multiplication of a Fraction by a fraction

Product of two fractions =   Product of Numerators/Product of Denominators

If one or both of the fractions is a mixed fraction, we first convert into an improper fraction.

When two proper fractions are multiplied, the product is less than both the fractions. Or, we say the value of the product of two proper fractions is smaller than each of the two fractions.

When two improper fractions are multiplied the product of two improper fractions is greater than each of the two fractions. Or, the value of the product of two improper fractions is more than each of the two fractions.

Problem: What does this drawing represent?



In this drawing, there are three circles. Each circle is divided into3 equal parts. The shaded portion in one circle = 2/3.

There are three circles. So, total shaded portion = 3\*2/3 = 2

In other words, if the total shaded portions are put together, 2 complete circles can be obta

Problem: Multiply and reduce to lowest form: 7\*3/5 ,   13\*1/3

Solution:

We will multiply the whole number with the numerator of the fraction, keeping the denominator same. So, we get:

= 7\*3/5

= 21/5

Since 21 and 5 have no common factors, the fraction is already in its lowest form.

13\*1/3

We will multiply the whole number with the numerator of the fraction, keeping the denominator same. So, we get:

=13\*1/3

= 13/3

Since 13 and 3 have no common factors, the fraction is already in its lowest form.

Problem:  Find: ½ of 24

= ½ \* 24

= 1\*24/2

=24/2

=12

Problem: find 1/7 of (a) 2/9 and  (b) 6/5

 1/7 of 2/9

 = 1/7\*2/9

= 1\*2/7\*9

= 2/63

1/7 of 6/5

 = 1/7\*6/5

= 186/785

=7/35

Problems: Multiply and reduce to the lowest form:

Firstly we will convert the mixed fraction into improper fraction. We get:

= 2/3\* (3\*2+2)/3

= 2/3\*8/3

= 2\*8/3\*3

= 16/9

Problem: Saili plants 4 saplings, in a row, in her garden. The distance between two adjacent saplings is ¾ m. Find the distance between the first and the last sapling.



Distance between first and last sapling( fourth sapling)

= ¾ +3/4 + ¾

Since ¾ is being added thrice, we get:

= 3\*3/4

= 9/4

Hence, the total distance between first and last sapling is 9/4 m.