Buy from flipkart.com

Fractions - An Introduction

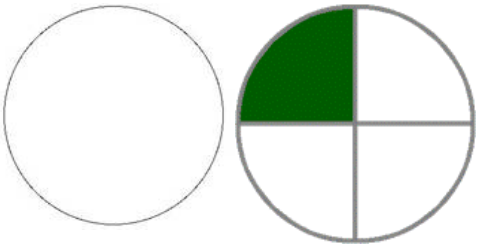
Created: Friday, 22 July 2011 09:03 | Published: Friday, 22 July 2011 09:03 | Written by Super User | Print

What is a Fraction?



We define fraction as a part of a whole number or fractions are for counting part of something. For example, we have a pizza which is to be shared among 4 friends so what is the share for each friend?

Below figures represent pizza and the share for one person respectively.



Types of fractions

- Proper fractions
- Improper fractions
- Mixed fractions

Proper Fraction – A fraction, whose numerator is less than the denominator is called Proper Fraction.
For example – 7/9, 3/11
Improper Fraction – A fraction whose numerator is greater than the denominator is called Improper Fraction.
For example – 17/5, 47/31
Mixed Fraction - A combination of a whole number and a proper fraction is called a Mixed Fraction.
For example – 2 3/5, 7 4/15

Conversion between Improper and Mixed fractions

In order to convert a mixed fraction into an improper fraction, we may use the following formula:

Improper Fraction = (Whole Number X Denominator) + Numerator
Denominator

For example – 3 2/5 = 3 X 5 +2 = 15 +2 = 17
5 5 5

Now, to express an improper fraction as a mixed fraction, we first divide the numerator by denominator and calculate the quotient and remainder and then we write the mixed fraction as

Remainder
Quotient
Denominator

For example – 19 = 4 ¾ [Quotient = 4, Remainder = 3]
4

Fractions – Standard Form

Types of fractions used in reducing fractions to their lowest or standard form

Equivalent Fractions – A given fraction and various fractions obtained by multiplying (or dividing) its numerator and denominator by the same non – zero number, are called Equivalent fractions.

For example – 3 X 2 = 6, 3 X 3 = 9, 3 X 4 = 12
4 X 2 8 4 X 3 12 4 X 4 16

Like Fractions – Fractions having the same denominators are called like fractions.

For example – 2, 7
15 15

Unlike Fractions – Fractions with different denominators are calledunlike fractions

For example – 2, 7
13 24

How to write fraction in its standard form

Fraction In Lowest Terms – A fraction is in its lowest terms if its numerator and denominator have no common factor other than 1.

For example - Reduce 144
180
First we find the HCF of 144 and 180 by factorization method.
The factors of 144 are: 1,2,3,4,6,8,9,12,16,18,24,36,48,72and 144
The factors of 180 are: 1,2,3,4,5,6,10,12,15,18,30,36,45,60,90 and 180
The common factors of 144 and 180 are: 1, 2, 3,4,6,12,18 and 36
So, HCF of 144 and 180 is 36.
Dividing numerator and denominator by the HCF of 144 and 180 i.e., 36
Now, 144 = 144 ÷ 36 = 4
180 180 ÷ 36 5

Comparing Fractions

Comparing Fractions – In order to compare fractions, we may use the following steps:

- Find the LCM of the denominators of the given fractions.
- Convert each fraction to its equivalent fraction with denominator equal to the LCM obtained in step 1.
- Arrange the fractions in ascending or descending order by arranging numerators in ascending or descending order.

For example, which is larger ¾ or 5/12?
Let us first find the LCM of 4 and 12.
We have,
2 4 12
2 2 6
3 1 3
1 1

LCM of 4 and 12 is 2 X 2 X 3= 12

Now we convert the given fractions to equivalent fractions with denominator 12.
3 = 3 X 3 = 9
4 4 X 3 12
We know that 9 > 5
9 > 5 3 > 5
12 12 4 12

Conversion of unlike fractions to like fractions

To convert unlike fractions to like fractions we follow the following steps:

- Find the LCM of the denominators of the given fractions.
- Convert each of the given fractions into an equivalent fraction having denominator equal to the LCM obtained in previous step.

For example – Convert the unlike fractions 7/6, 5/9 and 5/12 into like fractions.
We have, LCM (6, 9, 12) = (3 X 2 X 3 X 2) = 36
Now, 7 = 7 X 6 = 42 ; 5 = 5 X 4 = 20 ; 5 = 5 X 3 = 15
6 6 X 6 36 9 9 x 4 36 12 12 X 3 36
Clearly, 42/36, 20/36 and 15/36 are like fractions.

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

About eAge Tutoring:

eAgeTutor.com is the premium online tutoring provider. Using materials developed by highly qualified educators and leading content developers, a team of top-notch software experts, and a group of passionate educators, eAgeTutor works to ensure the success and satisfaction of all of its students.

Contact us today to learn more about our tutoring programs and discuss how we can help make the dreams of the student in your life come true!

Reference Links:

- http://en.wikipedia.org/wiki/Fraction_(mathematics)
- http://www.thefreedictionary.com/proper+fraction
- http://wiki.answers.com/Q/What_is_an_improper_fraction
- http://en.wikipedia.org/wiki/Fraction_(mathematics)#Mixed_numbers
- http://www.aaaknow.com/fra42ax2.htm
- http://math.about.com/library/bll.htm
- http://www.aaaknow.com/fra43ax2.htm

Category:ROOT

Joomla SEF URLs by Artio