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CLASS : V

SUBJECT : MATHEMATICS

CHAPTER NUMBER: 9

CHAPTER NAME : FRACTION

SUB-TOPIC : FRACTIONS , TYPES OF FRACTIONS, REDUCING TO THE LOWEST TERMS.

EXERCISE 9 A Q.NO.1,2 and 3

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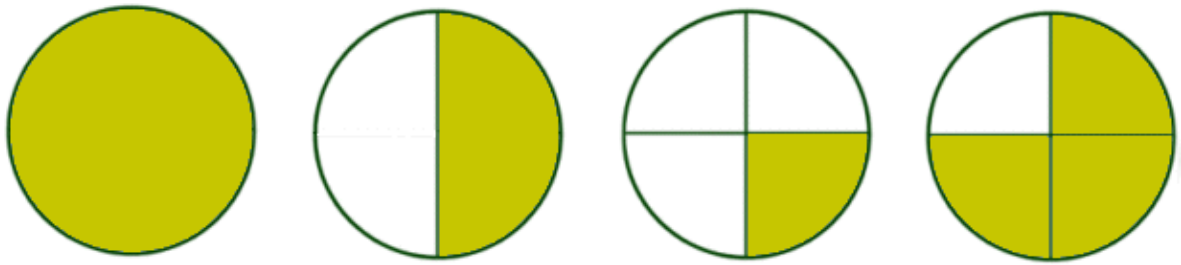
A fraction tells us how many parts of a whole we have.



QUICK REVISION

Numerator
(number of parts we have)

$$\frac{2}{5}$$

Denominator
(total parts in whole)

TYPES OF FRACTIONS

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1. LIKE FRACTION

Fractions which have same denominators are like fractions.

$\frac{2}{7}$ $\frac{4}{7}$ $\frac{5}{7}$ $\frac{6}{7}$

2. UNLIKE FRACTION

Fractions which are not like fractions are called unlike fractions.

$\frac{2}{7}$ $\frac{7}{8}$ $\frac{5}{9}$ $\frac{3}{5}$

TYPES OF FRACTIONS

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3. PROPER FRACTION

A fraction whose numerator is smaller than the denominator is called the proper fraction.

$\frac{2}{7}$ $\frac{7}{8}$ $\frac{5}{9}$ $\frac{3}{5}$

4. IMPROPER FRACTION

A fraction whose numerator is greater than the denominator is called the improper fraction.

$\frac{9}{7}$ $\frac{11}{8}$ $\frac{13}{9}$ $\frac{7}{5}$

TYPES OF FRACTIONS

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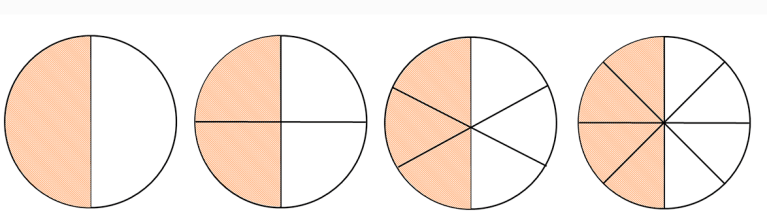
5. MIXED FRACTION

A fraction which has a whole number and a proper fraction is called mixed fraction.

$3\frac{2}{7}$ $5\frac{7}{8}$ $2\frac{5}{9}$ $4\frac{3}{5}$

6. EQUIVALENT FRACTION

Two or more fractions representing the same part of the whole are called equivalent fraction.



$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8}$

TYPES OF FRACTIONS

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We can find equivalent fraction by :
Dividing by the same number
Multiplying the same number

8. RECIPROCAL FRACTION

When the product of two fractions is equal to 1, they are called reciprocal fractions.

$\frac{2}{7}$ and $\frac{7}{2}$ $\qquad$ $\frac{5}{9}$ and $\frac{9}{5}$

$$\frac{\cancel{1}}{\cancel{5}}{\cancel{9}} \times \frac{\cancel{1}}{\cancel{9}}{\cancel{5}}$$

REDUCING TO THE LOWEST TERM

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Example 1

Reduce $\frac{16}{24}$ to its lowest term.

H.C.F. of 16 and 24 is **8**

Let's divide the numerator and the denominator by 8

$$\frac{16 \div 8}{24 \div 8} = \frac{2}{3}$$

REDUCING TO THE LOWEST TERM

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Alternatively

We can **divide** the numerator and denominator by their **common factors**

$$\frac{\cancel{16}^{\cancel{8}^{\cancel{4}^{2}}}}{\cancel{24}^{\cancel{12}^{\cancel{6}^{3}}}} = \frac{2}{3}$$

EXERCISE – 9 A

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1. Write 4 equivalent fractions of the following

a. $\frac{1}{3} = \frac{2}{6} \quad \frac{3}{9} \quad \frac{4}{12} \quad \frac{10}{30}$

b. $\frac{4}{5} = \frac{8}{10} \quad \frac{12}{15} \quad \frac{16}{20} \quad \frac{20}{25}$

a. Multiply 2, 3, 4 and 10

b. Multiply 2 , 3, 4 and 5

EXERCISE – 9 A

2. Fill in the blanks

a. $\frac{1}{5} = \frac{4}{20}$

e. $\frac{6}{7} = \frac{24}{28}$

f. $\frac{18}{54} = \frac{9}{27}$

EXERCISE 9 A

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3. Reduce the following fractions to their lowest term.

a. $\frac{68}{136}$

Solution:

$$\frac{\overset{34}{\cancel{68}}}{\underset{68}{\cancel{136}}} = \frac{\cancel{34}^{17}}{\underset{34}{\cancel{68}}} = \frac{\cancel{17}^{1}}{\underset{2}{\cancel{34}}} = \frac{1}{2}$$

$$\therefore \quad \frac{68}{136} = \frac{1}{2}$$

REDUCING TO THE LOWEST TERM

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3. Reduce the following fractions to their lowest term.

b. $\frac{102}{119}$

Solution:

$$\frac{102 \div 17}{119 \div 17} = \frac{6}{7}$$

$$\therefore \frac{102}{119} = \frac{6}{7}$$

REDUCING TO THE LOWEST TERM

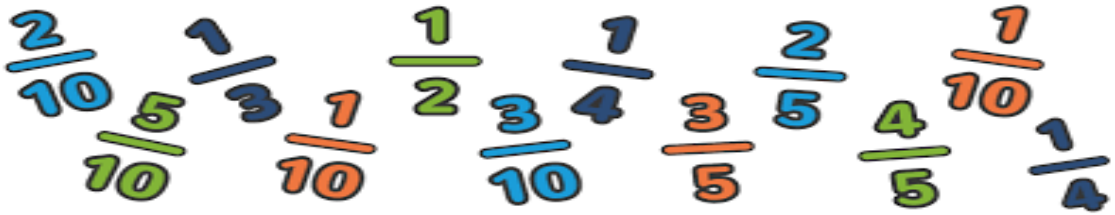
3. Reduce the following fractions to their lowest term.

c. $\frac{153}{204}$

Solution:

$$\frac{\overset{51}{\cancel{153}}}{\underset{68}{\cancel{204}}} = \frac{\overset{3}{\cancel{51}}}{\underset{4}{\cancel{68}}} = \frac{3}{4}$$

$$\therefore \quad \frac{153}{204} = \frac{3}{4}$$



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Home Assignment : Complete Exercise 9 A Q.no. 4 in the note book.

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CLASS : V

SUBJECT : MATHEMATICS

CHAPTER NUMBER: 9

CHAPTER NAME : FRACTION

SUB-TOPIC : FRACTIONS , CONVERSION OF IMPROPER FRACTIONS TO MIXED FRACTIONS

EXERCISE 9 A Q.NO.5 TO 8

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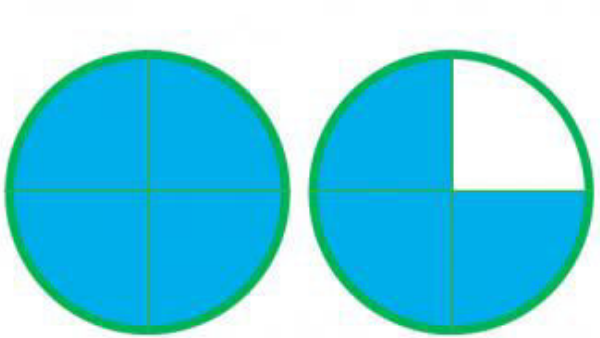
MIXED FRACTION

A fraction which has a whole number and a proper fraction is called mixed fraction.



$$1\frac{3}{4}$$

PROPER FRACTION

WHOLE NUMBER

IMPROPER FRACTION

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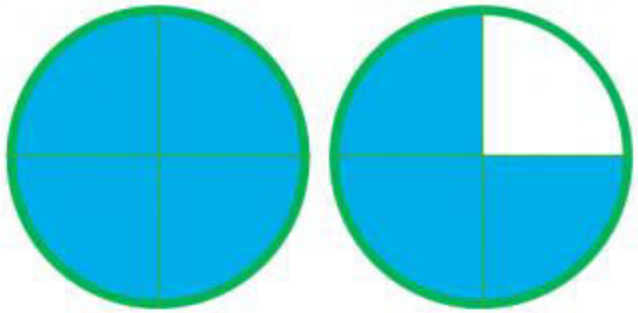
A fraction whose numerator is greater than the denominator is called the improper fraction.



$$\frac{7}{4}$$

Numerator is greater than denominator

CONVERSION OF IMPROPER FRACTION TO MIXED FRACTION

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$\frac{13}{9}$

1

Divide the numerator by the denominator.

$$\begin{array}{r} 1 \\ 9\overline{)13} \\ \underline{9} \\ 4 \end{array}$$

2

Put the remainder over the denominator

$$\frac{13}{9} = Q\,\frac{R}{D} = 1\,\frac{4}{9}$$

EXERCISE – 9 A

5. Convert the following improper fractions into mixed numbers

c. $\frac{123}{6} = Q\,\frac{R}{D} = 20\,\frac{3}{6}$

$$\begin{array}{r} 20 \\ 6\overline{)\,123} \\ \underline{12} \\ 03 \\ \underline{00} \\ 3 \end{array}$$

d. $\frac{98}{16} = Q\,\frac{R}{D} = 6\,\frac{2}{16}$

$$\begin{array}{r} 6 \\ 16\overline{)\,98} \\ \underline{96} \\ 2 \end{array}$$

EXERCISE – 9 A

5. Convert the following improper fractions into mixed numbers

e. $\frac{38}{4} = Q\ \frac{R}{D} = 9\ \frac{2}{4}$

CONVERSION OF MIXED FRACTION TO IMPROPER FRACTION

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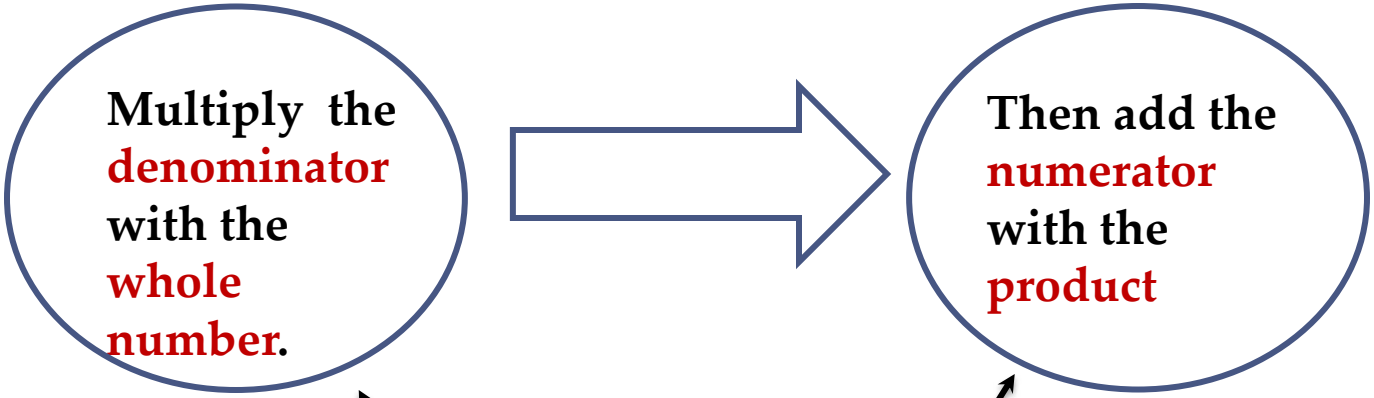

$$2\frac{5}{9} = \boxed{9 \times 2 = 18} = \boxed{5 + 18}$$

$$2\frac{5}{9} = \frac{23}{9}$$

CONVERSION OF MIXED FRACTION TO IMPROPER FRACTION

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EXAMPLE-1

$$5\frac{3}{7} = \frac{38}{7}$$

$$\frac{7 \times 5 + 3}{8}$$

EXERCISE – 9 A

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6. Convert the following mixed fractions into improper fractions

a. $14\frac{3}{4} = \frac{59}{4}$

$$\frac{4 \times 14 + 3}{4}$$

b. $8\frac{6}{7} = \frac{62}{7}$

$$\frac{7 \times 8 + 6}{7}$$

g. $28\frac{5}{6} = \frac{173}{6}$

$$\frac{6 \times 28 + 5}{6}$$

EXERCISE – 9 A

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7. Write 3 improper fractions with 12 as the denominator.

Ans. $\frac{13}{12}$ $\frac{31}{12}$ $\frac{29}{12}$

8. Write 3 fractions which are equal to 1

Ans. $\frac{5}{5}$ $\frac{8}{8}$ $\frac{9}{9}$

LEARNING OUTCOME:

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Students are able to

- **To convert fractions**
- **To compare and contrast different types of fractions.**

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CLASS : V

SUBJECT : MATHEMATICS

CHAPTER NUMBER: 9

CHAPTER NAME : FRACTION

SUB-TOPIC : COMPARISON FRACTIONS

EXERCISE 9 A Q. NO. 9 TO 12

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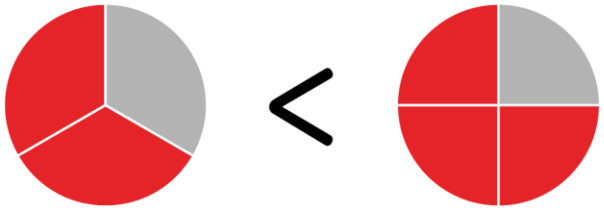

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Which fraction is larger?

Example-4

Which is smaller $\frac{7}{9}$ or $\frac{5}{8}$

L.C.M. OF 9 and 8 = 9 × 8 = 72

$$\frac{5}{8} = \frac{5 \times 9}{8 \times 9} = \frac{45}{72}$$

$$\frac{7}{9} = \frac{7 \times 8}{9 \times 8} = \frac{56}{72}$$

$$\frac{5}{8} < \frac{7}{9}$$

ANS.

COMPARISON OF FRACTIONS

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Example- 5

Arrange in ascending order $\frac{5}{6}$ $\frac{7}{8}$ $\frac{5}{9}$

L.C.M. OF 6, 8 and 9 = 2 × 3 × 2 × 2 × 3 = 72

8 = 2 × 2 × 2
6 = 2 × 3
9= 3 × 3

$$\frac{5}{6} = \frac{5 \times 12}{6 \times 12} = \frac{60}{72}$$

$$\frac{7}{8} = \frac{7 \times 9}{8 \times 9} = \frac{63}{72}$$

$$\frac{5}{9} = \frac{5 \times 8}{9 \times 8} = \frac{40}{72}$$

$$\frac{5}{9} < \frac{5}{6} < \frac{7}{8}$$

ANS.

EXERCISE – 9 A

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9. Compare using > or <

a. $\frac{5}{14}$ < $\frac{5}{8}$

b. $\frac{11}{16}$ < $\frac{11}{12}$

EXERCISE – 9 A

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10. Fill in the blanks using > or <

a. $\frac{3}{4}$ [<] $\frac{6}{7}$

b. $\frac{8}{9}$ [>] $\frac{5}{6}$

EXERCISE – 9 A

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11. Arrange the following in ascending order [use <]

a. $\frac{11}{13}$ $\frac{11}{17}$ $\frac{11}{15}$

Ans. $\frac{11}{17} < \frac{11}{15} < \frac{11}{13}$

f. $\frac{7}{12}$ $\frac{5}{6}$ $\frac{2}{3}$

Ans. $\frac{7}{12} < \frac{2}{3} < \frac{5}{6}$

L.C.M. OF 3, 6 and 12 = 12

$\frac{7}{12} = \frac{7}{12}$

$\frac{5}{6} = \frac{10}{12}$

$\frac{2}{3} = \frac{8}{12}$

12. Arrange the following in descending order [use <]

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a. $\frac{1}{4}$ $\frac{7}{8}$ $\frac{5}{12}$

Ans. $\frac{7}{8} > \frac{5}{12} > \frac{1}{4}$

L.C.M. OF 4, 8 and 12 = 24

$\frac{1}{4} = \frac{6}{24}$

$\frac{7}{8} = \frac{21}{24}$

$\frac{5}{12} = \frac{10}{24}$

b. $\frac{5}{8}$ $\frac{3}{16}$ $\frac{3}{4}$

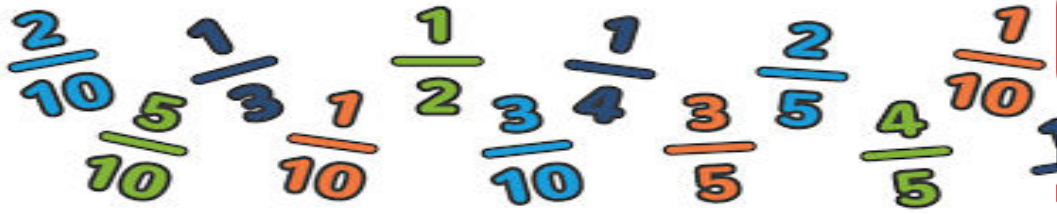
Ans. $\frac{3}{4} > \frac{5}{8} > \frac{3}{16}$

L.C.M. OF 8, 16 and 4 = 16

$\frac{5}{8} = \frac{10}{16}$

$\frac{3}{16} = \frac{3}{16}$

$\frac{3}{4} = \frac{12}{16}$



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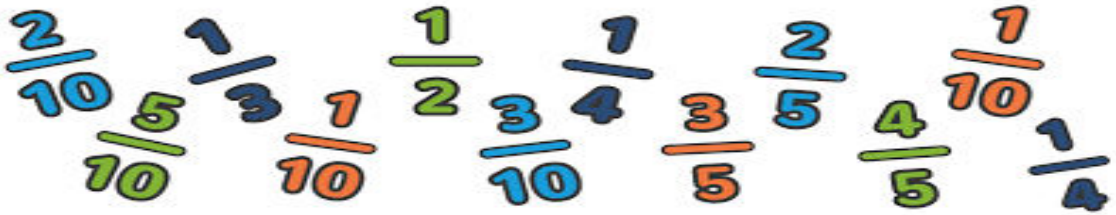
Home Assignment : Complete Exercise 9 A Q.no. 9 to 12 bit c and d in the notebook.



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Learning outcome: Students are able to compare fractions.

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