

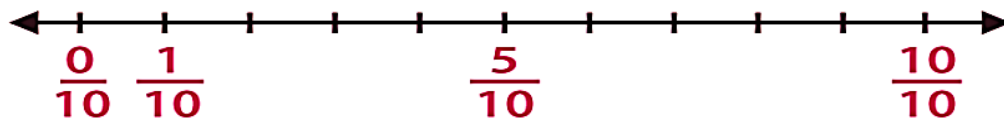
Board – CBSE

Class – 6TH

Topic – FRACTIONS

1. Represent $0/10$, $1/10$, $5/10$, and $10/10$ on a number line.

Sol: The fraction $0/10$, $1/10$, $5/10$ and $10/10$ are represented on a number line as given below:



2. Convert each of the following into a mixed fraction:

(i) $28/9$

(ii) $226/15$

Sol: (i) $28/9$ can be written as a mixed fraction as $3\frac{1}{9}$.

(ii) $226/15$ can be written as a mixed fraction as $15\frac{1}{15}$.

3. Convert each of the following into an improper fraction:

(i) $7\frac{1}{4}$

(ii) $8\frac{5}{7}$

Sol: (i) $7\frac{1}{4}$ can be written as an improper fraction as $29/4$.

(ii) $8\frac{5}{7}$ can be written as an improper fraction as $61/7$.

4. Check whether the given fractions are equivalent:

(i) $5/9$, $30/54$

(ii) $2/7$, $16/42$

Sol: (i) We know that

$$5/9 \times 6/6 = 30/54$$

Therefore, $5/9$ is equivalent to $30/54$.

(ii) We know that

$$2/7 \times 8/8 = 16/56$$

Therefore, $2/7$ is not equivalent to $16/42$.

5. Reduce each of the following fractions to its lowest term (simplest form):

(i) $40/75$

(ii) $42/28$

Sol: (i) $40/75$

We know that

Factors of 40 are

1, 2, 4, 5, 8, 10, 20 and 40

Factors of 75 are

1, 3, 5, 15 and 75

So the common factors are 1 and 5

We get HCF = 5

By dividing numerator and denominator by 5

$$40/75 \div 5/5 = 8/15$$

Hence, the simplest form of 40/75 is 8/15.

(ii) 42/28

We know that

Factors of 42 are

1, 2, 3, 6, 7, 14, 21 and 42

Factors of 28 are

1, 2, 4, 7, 14 and 28

So the common factors are 1, 2 and 4

We get HCF = 4

By dividing numerator and denominator by 4

$$42/28 \div 4/4 = 3/2$$

Hence, the simplest form of 42/28 is 3/2.

6. Arrange in descending order in each of the following using the symbol >:

(i) 8/17, 8/9, 8/5, 8/13

(ii) 5/9, 3/12, 1/3, 4/15

Sol: (i) 8/17, 8/9, 8/5, 8/13 can be written in the descending order as $8/5 > 8/9 > 8/13 > 8/17$

(ii) 5/9, 3/12, 1/3, 4/15 can be written in the descending order as $5/9 > 1/3 > 3/12 > 4/15$

7. Solve:

(i) $5/12 + 1/12$

(ii) $4/13 + 2/13 + 1/13$

Sol: (i) $5/12 + 1/12$

It can be written as

$$5/12 + 1/12 = (5 + 1)/12$$

On further calculation

$$5/12 + 1/12 = 6/12 = 1/2$$

(ii) $\frac{4}{13} + \frac{2}{13} + \frac{1}{13}$

It can be written as

$$\frac{4}{13} + \frac{2}{13} + \frac{1}{13} = \frac{(4 + 2 + 1)}{13}$$

On further calculation

$$\frac{4}{13} + \frac{2}{13} + \frac{1}{13} = \frac{7}{13}$$

8. Add:

(i) $\frac{3}{4}$ and $\frac{5}{6}$

(ii) $\frac{4}{5}$ and $\frac{7}{15}$

Sol: (i) $\frac{3}{4}$ and $\frac{5}{6}$

It can be written as

$$\frac{3}{4} + \frac{5}{6}$$

We know that the LCM of 4 and 6 is 12

In order to convert fraction into equivalent fraction having 12 as denominator

$$= \left[\frac{(3 \times 3)}{(4 \times 3)} \right] + \left[\frac{(5 \times 2)}{(6 \times 2)} \right]$$

On further calculation

$$= \frac{9}{12} + \frac{10}{12}$$

We get

$$= \frac{(9 + 10)}{12} = \frac{19}{12}$$

(ii) $\frac{4}{5}$ and $\frac{7}{15}$

It can be written as

$$\frac{4}{5} + \frac{7}{15}$$

We know that the LCM of 5 and 15 is 15

In order to convert fraction into equivalent fraction having 15 as denominator

$$= \left[\frac{(4 \times 3)}{(5 \times 3)} \right] + \left[\frac{(7 \times 1)}{(15 \times 1)} \right]$$

On further calculation

$$= \frac{12}{15} + \frac{7}{15}$$

We get

$$= \frac{(12 + 7)}{15} = \frac{19}{15}$$

9. Subtract:

(i) $\frac{2}{7}$ from $\frac{19}{21}$

(ii) $\frac{4}{15}$ from $2\frac{1}{5}$

Sol: (i) $\frac{2}{7}$ from $\frac{19}{21}$

It can be written as

$$19/21 - 2/7$$

We know that LCM of 21 and 7 is 21

In order to convert fraction into equivalent fraction having 21 as denominator

$$= [(19 \times 1) / (21 \times 1)] - [(2 \times 3) / (7 \times 3)]$$

On further calculation

$$= 19/21 - 6/21$$

We get

$$= (19 - 6)/21 = 13/21$$

(ii) $4/15$ from $2 \frac{1}{5}$

It can be written as

$$11/5 - 4/15$$

We know that LCM of 5 and 15 is 15

In order to convert fraction into equivalent fraction having 15 as denominator

$$= [(11 \times 3) / (5 \times 3)] - [(4 \times 1) / (15 \times 1)]$$

On further calculation

$$= 33/15 - 4/15$$

We get

$$= (33 - 4)/15 = 29/15$$