

EXERCISE : 5.2

1. Write the following as fractions.

(a) $56 \div 17$ (b) $23 \div 32$ (c) $9 \div 126$ (d) $109 \div 200$

Solution :

(a) $56 \div 17 = \frac{56}{17}$

2. Write the following as division facts.

(a) $\frac{83}{100} = 83 \div 100$

3. Between which two whole numbers would $2 \frac{1}{15}$ lie? In how many parts should the number line between these numbers be divided to represent $2 \frac{1}{15}$?

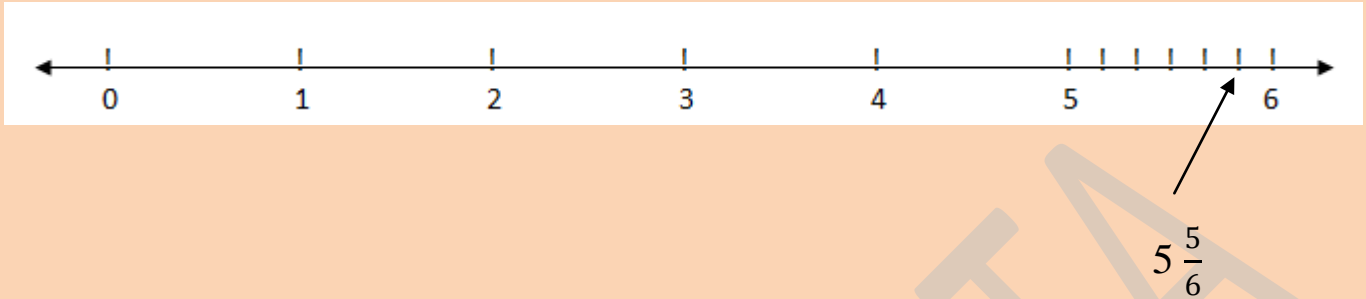
Solution : -

$2 \frac{1}{15}$ lies between 2 and 3 .

To represent $2 \frac{1}{15}$ on the number line we have to divide 2 to 3 in to 15 equal parts.

4. Represent the following fractions on the number line.

(c) $5\frac{5}{6}$



5. Write five equivalent fractions for:

(a) $\frac{13}{37}$

Solution : - Five equivalent fraction of $\frac{13}{37}$ are $\frac{26}{74}$, $\frac{39}{111}$, $\frac{52}{148}$, $\frac{65}{185}$, $\frac{78}{222}$

6. Write a fraction equivalent to:

(a) $\frac{21}{30}$ with (i) numerator 7 (ii) denominator 120

Solution : - (i) A fraction equivalent to $\frac{21}{30}$ with numerator 7 is $\frac{7}{10}$

***** [Dividing both numerator and denominator by 3]

(ii) A fraction equivalent to $\frac{21}{30}$ with denominator 120 is $\frac{84}{120}$

***** [Multiplying both numerator and denominator by 4]

(b) $\frac{11}{13}$ with (i) numerator 55 (ii) denominator 104

Solution : - (i) A fraction equivalent to $\frac{11}{13}$ with numerator 55 is $\frac{55}{65}$

***** [Multiplying both numerator and denominator by 5]

(ii) A fraction equivalent to $\frac{11}{13}$ with denominator 104 is $\frac{88}{104}$

***** [Multiplying both numerator and denominator by 8]

7. Reduce the following fractions to simplest form.

(a) $\frac{255}{50}$

Solution : - Simplest form of $\frac{255}{50} = \frac{51}{10}$ [Dividing both by Nr. & Dr. by 5]

(c) $\frac{82}{12}$

Solution : - Simplest form of $\frac{82}{12} = \frac{41}{6}$ [Dividing both by Nr. & Dr. by 2]

8. Fill in the boxes with $>$, $<$ or $=$ symbol.

(a) $\frac{32}{57}$ $\frac{21}{57}$

(b) $\frac{83}{97}$ $\frac{83}{79}$

(c) $\frac{57}{52}$ $\frac{12}{13}$

(d) $\frac{7}{9}$ $\frac{11}{17}$

(e) $\frac{10}{19}$ $\frac{20}{38}$

(f) $\frac{1}{6}$ $\frac{3}{8}$

Solution :-

(a) $\frac{32}{57}$ $\frac{21}{57}$

(b) $\frac{83}{97}$ $\frac{83}{79}$

(c) $\frac{57}{52}$ $\frac{12}{13}$

(d) $\frac{7}{9}$ $\frac{11}{17}$

$$(e) \quad \frac{10}{19} \quad \boxed{=} \quad \frac{20}{38}$$

$$(f) \quad \frac{1}{6} \quad \boxed{<} \quad \frac{3}{8}$$

9. Arrange the following fractions in ascending order.

$$(a) \quad \frac{5}{7}, \frac{16}{7}, \frac{1}{7}, \frac{11}{7}, \frac{18}{7}, \frac{2}{7}$$

Solution : - Here denominators of all the fractions are same , so the fraction with smaller numerator is smaller.

$$\text{Here } 1 < 2 < 5 < 11 < 16 < 18$$

Therefore the required ascending order is $\frac{1}{7}, \frac{2}{7}, \frac{5}{7}, \frac{11}{7}, \frac{16}{7}, \frac{18}{7}$

$$(b) \quad \frac{7}{8}, \frac{7}{69}, \frac{7}{6}, \frac{7}{19}, \frac{7}{12}$$

Solution : - Here numerators of all the fractions are same , so the fraction with smaller denominator is greater.

$$\text{Here } 6 < 8 < 12 < 19 < 69$$

Therefore the required ascending order is $\frac{7}{69}, \frac{7}{19}, \frac{7}{12}, \frac{7}{8}, \frac{7}{6}$

10. Arrange the following fractions in descending order.

(c) $\frac{3}{8}, \frac{5}{16}, \frac{7}{4}, \frac{6}{64}$

Solution :-

Here LCM of 8, 16, 4 and 64 = 64

Now we will convert all the four fractions $\frac{3}{8}, \frac{5}{16}, \frac{7}{4}, \frac{6}{64}$ to their respective equivalent fractions with denominator 64 as –

$$\frac{3}{8} = \frac{3 \times 8}{8 \times 8} = \frac{24}{64}, \quad \frac{5}{16} = \frac{5 \times 4}{16 \times 4} = \frac{20}{64}$$

$$\frac{7}{4} = \frac{7 \times 16}{4 \times 16} = \frac{112}{64}, \quad \frac{6}{64} = \frac{6 \times 1}{64 \times 1} = \frac{6}{64}$$

Now, $112 > 24 > 20 > 6$

Therefore the required descending order is - $\frac{7}{4}, \frac{3}{8}, \frac{5}{16}, \frac{6}{64}$

11. Without finding LCM, fill in the blanks with $>$, $<$ or $=$ symbol.

(a) $\frac{1}{7}$ $\frac{3}{5}$

(b) $\frac{6}{11}$ $\frac{11}{7}$

(c) $\frac{13}{2}$ $\frac{18}{25}$

(d) $\frac{51}{9}$ $\frac{17}{3}$

Solution : -

(a) $\frac{1}{7} < \frac{3}{5}$ [Here $1 \times 5 < 3 \times 7$]

(b) $\frac{6}{11} < \frac{11}{7}$ [Here $6 \times 7 < 11 \times 11$]

(c) $\frac{13}{2} > \frac{18}{25}$ [Here $13 \times 25 > 2 \times 18$]

(d) $\frac{51}{9} = \frac{17}{3}$ [Here $51 \times 3 = 9 \times 17$]

12. Correct the error , if any , in the following order :

$$\frac{3}{5} > \frac{7}{4} > \frac{5}{6} > \frac{5}{8}$$

Solution : -

The correct order is -

$$\frac{7}{4} > \frac{5}{6} > \frac{5}{8} > \frac{3}{5}$$

Some more examples :

1. Compare the following fractions :

a. $\frac{5}{8} > \frac{1}{5}$ b. $\frac{2}{7} < \frac{5}{7}$ c. $2 > \frac{1}{11}$ d. $\frac{2}{9} < \frac{7}{5}$

Solution : a. $\frac{5}{8} > \frac{1}{5}$ (Here $5 \times 5 > 1 \times 8$)

b. $\frac{2}{7} < \frac{5}{7}$ (Here $2 \times 7 < 5 \times 7$)

c. $2 > \frac{1}{11}$

(Here any whole number is greater than any proper fraction)

d. $\frac{2}{9} < \frac{7}{5}$ (Here $2 \times 5 < 7 \times 9$)

2. Arrange the fractions $\frac{2}{3}$, $\frac{4}{5}$, $\frac{1}{8}$, $\frac{5}{9}$ in ascending order :

Solution: Here LCM of 3, 5, 8 and 9 = 360.

Now we will convert all the four fractions $\frac{2}{3}$, $\frac{4}{5}$, $\frac{1}{8}$ and $\frac{5}{9}$ to their respective equivalent fractions with denominator 360 as –

$$\frac{2}{3} = \frac{2 \times 120}{3 \times 120} = \frac{240}{360}, \quad \frac{4}{5} = \frac{4 \times 72}{5 \times 72} = \frac{288}{360}$$

$$\frac{1}{8} = \frac{1 \times 45}{8 \times 45} = \frac{45}{360}, \quad \frac{5}{9} = \frac{5 \times 40}{9 \times 40} = \frac{200}{360}$$

Here $45 < 200 < 240 < 288$

The required ascending order is $\frac{1}{8} < \frac{5}{9} < \frac{2}{3} < \frac{4}{5}$

3. Arrange the following fractions $\frac{1}{6}$, $\frac{2}{9}$, $\frac{4}{5}$, $\frac{2}{3}$ in descending order

Solution: Here LCM of 6, 9, 5 and 3 = 90.

Now we will convert all the four fractions $\frac{1}{6}$, $\frac{2}{9}$, $\frac{4}{5}$, $\frac{2}{3}$ to their respective equivalent fractions with denominator 90 as –

$$\frac{1}{6} = \frac{1 \times 15}{6 \times 15} = \frac{15}{90}, \quad \frac{2}{9} = \frac{2 \times 10}{9 \times 10} = \frac{20}{90}$$

$$\frac{4}{5} = \frac{4 \times 18}{5 \times 18} = \frac{72}{90}, \quad \frac{2}{3} = \frac{2 \times 30}{3 \times 30} = \frac{60}{90}$$

Here $72 > 60 > 20 > 15$

So the required descending order is : $\frac{4}{5} > \frac{2}{3} > \frac{2}{9} > \frac{1}{6}$