



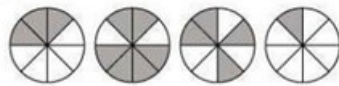
NCERT SOLUTIONS FOR CLASS 6 MATHS FRACTIONS EXERCISE 7.4

Exercise 7.4

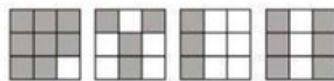
Question 1:

Write shaded portion as fraction. Arrange them in ascending and descending order using correct sign '<', '=', '>' between the fractions:

(a)



(b)



(c) Show $\frac{2}{6}$, $\frac{4}{6}$, $\frac{8}{6}$ and $\frac{6}{6}$ on the number line. Put appropriate signs between the fractions given.

$$\frac{5}{6} \square \frac{2}{6}, \quad \frac{3}{6} \square 0,$$

$$\frac{1}{6} \square \frac{6}{6}, \quad \frac{8}{6} \square \frac{5}{6}$$

(a)



Here, 1st circle represents 3 shaded parts out of 8 equal parts. Therefore, it represents a fraction $\frac{3}{8}$.



Here, 2nd circle represents 6 shaded parts out of 8 equal parts. Therefore, it represents a fraction $\frac{6}{8}$.



Here, 3rd circle represents 4 shaded parts out of 8 equal parts. Therefore, it represents a fraction $\frac{4}{8}$.



Here, 4th circle represents 1 shaded part out of 8 equal parts. Therefore, it represents a

fraction $\frac{1}{8}$.

Now, these fractions may be arranged as

$$\frac{1}{8} < \frac{3}{8} < \frac{4}{8} < \frac{6}{8}$$

(b)



Here, 1st square represents 8 shaded parts out of 9 equal parts. Therefore, it represents

a fraction $\frac{8}{9}$.



Here, 2nd square represents 4 shaded parts out of 9 equal parts. Therefore, it

represents a fraction $\frac{4}{9}$.



Here, 3rd square represents 3 shaded parts out of 9 equal parts. Therefore, it represents

a fraction $\frac{3}{9}$.



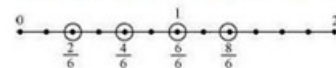
Here, 4th square represents 6 shaded parts out of 9 equal parts. Therefore, it represents

a fraction $\frac{6}{9}$.

Now, these fractions can be arranged as

$$\frac{3}{9} < \frac{4}{9} < \frac{6}{9} < \frac{8}{9}$$

(c) To represent the given fractions $\frac{2}{6}$, $\frac{4}{6}$, $\frac{8}{6}$, and $\frac{6}{6}$ on number line, each unit length should be divided in 6 equal parts. Now, these fractions can be represented as



$$\frac{5}{6} > \frac{2}{6}$$

$$\frac{3}{6} > 0$$

$$\frac{1}{6} < \frac{6}{6}$$

$$\frac{8}{6} > \frac{5}{6}$$

Question 2:

Compare the fractions and put an appropriate sign.

(a) $\frac{3}{6} \square \frac{5}{6}$ (b) $\frac{1}{7} \square \frac{1}{4}$

(c) $\frac{4}{5} \square \frac{5}{5}$ (d) $\frac{3}{5} \square \frac{3}{7}$

Answer:

(a) $\frac{3}{6} < \frac{5}{6}$

Here, the denominators are same. Therefore, the fraction having the greater numerator will be greater.

(b) $\frac{1}{7} = \frac{1 \times 4}{7 \times 4} = \frac{4}{28}$

$\frac{1}{4} = \frac{1 \times 7}{4 \times 7} = \frac{7}{28}$

As $4 < 7$,

$\frac{1}{7} < \frac{1}{4}$

(c) $\frac{4}{5} < \frac{5}{5}$

Here, the denominators are same. Therefore, the fraction having the greater numerator will be greater.

$$(d) \frac{3}{5} > \frac{3}{7}$$

Here, the numerators are same. Therefore, the fraction having lesser denominator will be greater.

Question 3:

Make five more such pairs and put appropriate sign.

Answer:

$$(i) \frac{6}{7} < \frac{8}{7}$$

Here, the denominators are same. Therefore, the fraction having the greater numerator will be greater.

$$(ii) \frac{5}{8} > \frac{3}{8}$$

Here, the denominators are same. Therefore, the fraction having the greater numerator will be greater.

$$(iii) \frac{6}{13} > \frac{6}{17}$$

Here, numerators are same. Therefore, the fraction having the lesser denominator will be greater.

$$(iv) \frac{5}{22} > \frac{3}{22}$$

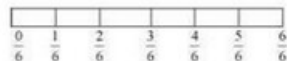
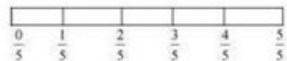
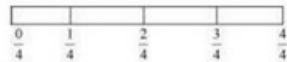
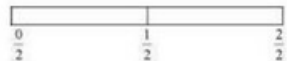
Here, the denominators are same. Therefore, the fraction having the greater numerator will be greater.

$$(v) \frac{9}{47} < \frac{9}{42}$$

Here, the numerators are same. Therefore, the fraction having the lesser denominator will be greater.

Question 4:

Look at the figures and write '<' or '>', '=' between the given pairs of fractions.



$$(a) \frac{1}{6} \square \frac{1}{3}$$

$$(b) \frac{3}{4} \square \frac{2}{6}$$

$$(c) \frac{2}{3} \square \frac{2}{4}$$

$$(d) \frac{6}{6} \square \frac{3}{3}$$

$$(e) \frac{5}{6} \square \frac{5}{5}$$

Answer:

(a) Here, the numerators are same. Therefore, the fraction having the lesser denominator will be greater.

$$\text{Hence, } \frac{1}{6} < \frac{1}{3}$$

$$(b) \frac{3}{4} = \frac{3 \times 3}{4 \times 3} = \frac{9}{12}$$

$$\frac{2}{6} = \frac{2 \times 2}{6 \times 2} = \frac{4}{12}$$

As the denominators of $\frac{9}{12}$ and $\frac{4}{12}$ are same, the fraction having the greater numerator will be greater.

$$\text{Hence, } \frac{3}{4} > \frac{2}{6}$$

(c) Here, the numerators are same. Therefore, the fraction having the lesser denominator will be greater.

$$\text{Hence, } \frac{2}{3} > \frac{2}{4}$$

$$(d) \text{ As } \frac{6}{6} = 1, \frac{3}{3} = 1,$$

$$\frac{6}{6} = \frac{3}{3}$$

(e) Here, the numerators are same. Therefore, the fraction having the lesser denominator will be greater.

$$\text{Hence, } \frac{5}{6} < \frac{5}{5}$$

Question 5:

How quickly can you do this? Fill appropriate sign ('<', '=', '>')

$$(a) \frac{1}{2} \square \frac{1}{5} \quad (b) \frac{2}{4} \square \frac{3}{6}$$

$$(c) \frac{3}{5} \square \frac{2}{3} \quad (d) \frac{3}{4} \square \frac{2}{8}$$

$$(e) \frac{3}{5} \square \frac{6}{5} \quad (f) \frac{7}{9} \square \frac{3}{9}$$

$$(g) \frac{1}{4} \square \frac{2}{8} \quad (h) \frac{6}{10} \square \frac{4}{5}$$

$$(i) \frac{3}{4} \square \frac{7}{8} \quad (j) \frac{6}{10} \square \frac{4}{5}$$

$$(k) \frac{5}{7} \square \frac{15}{21}$$

Answer:

(a) Here, the numerators are same. Therefore, the fraction having the lesser denominator will be greater.

$$\text{Hence, } \frac{1}{2} > \frac{1}{5}$$

$$(b) \frac{2}{4} = \frac{1}{2} \text{ and } \frac{3}{6} = \frac{1}{2}$$

$$\text{Hence, } \frac{2}{4} = \frac{3}{6}$$

$$(c) \frac{3}{5} = \frac{3 \times 3}{5 \times 3} = \frac{9}{15}$$

$$\frac{2}{3} = \frac{2 \times 5}{3 \times 5} = \frac{10}{15}$$

As the denominators of $\frac{9}{15}$ and $\frac{10}{15}$ are same, the fraction having the greater numerator will be greater.

$$\text{Hence, } \frac{3}{5} < \frac{2}{3}$$

$$(d) \frac{2}{8} = \frac{1}{4}$$

As the denominators of $\frac{3}{4}$ and $\frac{1}{4}$ are same, the fraction having the greater numerator will be greater.

$$\text{Hence, } \frac{3}{4} > \frac{2}{8}$$

(e) Here, the denominators are same. Therefore, the fraction having the greater numerator will be greater.

$$\text{Hence, } \frac{3}{5} < \frac{6}{5}$$

(f) Here, the denominators are same. Therefore, the fraction having the greater numerator will be greater.

$$\text{Hence, } \frac{7}{9} > \frac{3}{9}$$

$$(g) \frac{2}{8} = \frac{1}{4}$$

$$\text{Hence, } \frac{1}{4} = \frac{2}{8}$$

$$(h) \frac{6}{10} = \frac{3 \times 2}{5 \times 2} = \frac{3}{5}$$

As the denominators of $\frac{3}{5}$ and $\frac{4}{5}$ are same, the fraction having the greater numerator will be greater.

$$(h) \frac{6}{10} = \frac{3 \times 2}{5 \times 2} = \frac{3}{5}$$

As the denominators of $\frac{3}{5}$ and $\frac{4}{5}$ are same, the fraction having the greater numerator will be greater.

$$\text{Hence, } \frac{6}{10} < \frac{4}{5}$$

$$(i) \frac{3}{4} = \frac{3 \times 2}{4 \times 2} = \frac{6}{8}$$

As the denominators of $\frac{6}{8}$ and $\frac{7}{8}$ are same, the fraction having the greater numerator will be greater.

$$\text{Hence, } \frac{3}{4} < \frac{7}{8}$$

$$(j) \frac{6}{10} = \frac{3 \times 2}{5 \times 2} = \frac{3}{5}$$

As the denominators of $\frac{3}{5}$ and $\frac{4}{5}$ are same, the fraction having the greater numerator will be greater.

$$\text{Hence, } \frac{6}{10} < \frac{4}{5}$$

$$(k) \frac{5}{7} = \frac{5 \times 3}{7 \times 3} = \frac{15}{21}$$

$$\text{Hence, } \frac{5}{7} = \frac{15}{21}$$

Question 6:

The following fractions represent just three different numbers. Separate them into three groups of equivalent fractions, by changing each one to its simplest form.

$$(a) \frac{2}{12} \quad (b) \frac{3}{15}$$

$$(c) \frac{8}{50} \quad (d) \frac{16}{100}$$

$$(e) \frac{10}{60} \quad (f) \frac{15}{75}$$

$$(g) \frac{12}{60} \quad (h) \frac{16}{96}$$

$$(i) \frac{12}{75} \quad (j) \frac{12}{75}$$

$$(k) \frac{3}{18} \quad (l) \frac{4}{25}$$

Answer:

$$(a) \frac{2}{12} = \frac{1 \times 2}{6 \times 2} = \frac{1}{6}$$

$$(b) \frac{3}{15} = \frac{1 \times 3}{5 \times 3} = \frac{1}{5}$$

$$(c) \frac{8}{50} = \frac{4 \times 2}{25 \times 2} = \frac{4}{25}$$

$$(d) \frac{16}{100} = \frac{4 \times 4}{25 \times 4} = \frac{4}{25}$$

$$(e) \frac{10}{60} = \frac{1 \times 10}{6 \times 10} = \frac{1}{6}$$

$$(f) \frac{15}{75} = \frac{1 \times 15}{5 \times 15} = \frac{1}{5}$$

$$(g) \frac{12}{60} = \frac{1 \times 12}{5 \times 12} = \frac{1}{5}$$

$$(h) \frac{16}{96} = \frac{1 \times 16}{6 \times 16} = \frac{1}{6}$$

$$(i) \frac{12}{75} = \frac{4 \times 3}{25 \times 3} = \frac{4}{25}$$

$$(j) \frac{12}{72} = \frac{1 \times 12}{6 \times 12} = \frac{1}{6}$$

$$(k) \frac{3}{18} = \frac{1 \times 3}{6 \times 3} = \frac{1}{6}$$

$$(l) \frac{4}{25}$$

There are 3 groups of equivalent fractions

$$\frac{1}{6} \rightarrow (a), (e), (h), (j), (k)$$

$$\frac{1}{5} \rightarrow (b), (f), (g)$$

$$\frac{4}{25} \rightarrow (c), (d), (i), (l)$$

Question 7:

Find answers to the following. Write and indicate how you solved them.

$$(a) \text{ Is } \frac{5}{9} \text{ equal to } \frac{4}{5} ? \quad (b) \text{ Is } \frac{9}{16} \text{ equal to } \frac{5}{9} ?$$

$$(c) \text{ Is } \frac{4}{5} \text{ equal to } \frac{16}{20} ? \quad (d) \text{ Is } \frac{1}{15} \text{ equal to } \frac{4}{30} ?$$

Answer:

$$(a) \frac{5}{9}, \frac{4}{5}$$

Converting these into like fractions,

$$\frac{5}{9} = \frac{5}{9} \times \frac{5}{5} = \frac{25}{45}$$

$$\frac{4}{5} = \frac{4}{5} \times \frac{9}{9} = \frac{36}{45}$$

$$\text{As, } \frac{36}{45} \neq \frac{25}{45},$$

$$\text{Therefore, } \frac{5}{9} \text{ is not equal to } \frac{4}{5}.$$

$$(b) \frac{9}{16}, \frac{5}{9}$$

Converting these into like fractions,

$$\frac{9}{16} = \frac{9}{16} \times \frac{9}{9} = \frac{81}{144}$$

$$\frac{5}{9} = \frac{5}{9} \times \frac{16}{16} = \frac{80}{144}$$

$$\text{As, } \frac{81}{144} \neq \frac{80}{144},$$

Therefore, $\frac{9}{16}$ is not equal to $\frac{5}{9}$.

$$(c) \frac{4}{5}, \frac{16}{20}$$

$$\frac{16}{20} = \frac{4 \times 4}{5 \times 4} = \frac{4}{5}$$

$$\text{Therefore, } \frac{4}{5} = \frac{16}{20}$$

$$(d) \frac{1}{15}, \frac{4}{30}$$

$$\frac{4}{30} = \frac{2 \times 2}{15 \times 2} = \frac{2}{15}$$

Therefore, $\frac{1}{15}$ is not equal to $\frac{4}{30}$

Question 8:

Ila read 25 pages of a book containing 100 pages. Lalita read $\frac{2}{5}$ of the same book. Who read less?

Answer:

$$\text{Numbers of pages read by Lalita} = \frac{2}{5} \times 100 = 40$$

Number of pages read by Ila = 25

Hence, Ila has read less number of pages.

Question 9:

Rafiq exercised for $\frac{3}{6}$ of an hour, while Rohit exercised for $\frac{3}{4}$ of an hour. Who exercised for a longer time?

Answer:

Rafiq exercised for $\frac{3}{6}$ hr and Rohit exercised for $\frac{3}{4}$ hr.

Converting these into like fractions,

$$\frac{3}{6} = \frac{3 \times 2}{6 \times 2} = \frac{6}{12}$$

$$\frac{3}{4} = \frac{3 \times 3}{4 \times 3} = \frac{9}{12}$$

$$\frac{9}{12} > \frac{6}{12} \Rightarrow \frac{3}{4} > \frac{3}{6}$$

Hence, Rohit exercised for a longer time.

Question 10:

In a class A of 25 students, 20 passed in first class; in another class B of 30 students, 24 passed in first class. In which class was a greater fraction of students getting first class?

Answer:

$$\text{Fraction of students of class A who passed in 1st class} = \frac{20}{25} = \frac{4}{5}$$

$$\text{Fraction of students of class B who passed in 1st class} = \frac{24}{30} = \frac{4}{5}$$

From both classes, an equal fraction of students passed in first class.

Exercise 7.5**Question 1:**

Write these fractions appropriately as additions or subtractions:

(a)



(b)



(c)



***** END *****