

RD SHARMA

Solutions

Class 6 Maths

Chapter 6

Ex 6.7

Q1. Write each fraction. Arrange them in ascending and descending order using correct sign '<', '=', '>' between the fractions:

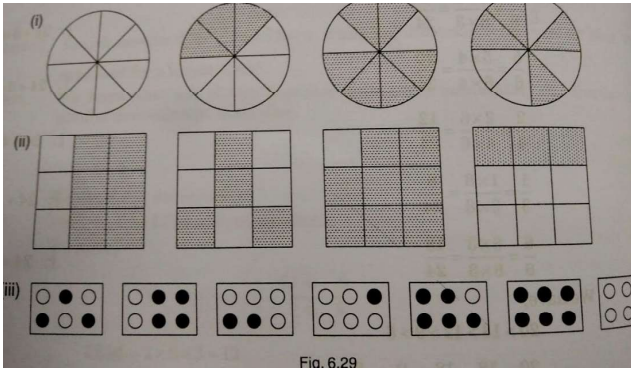
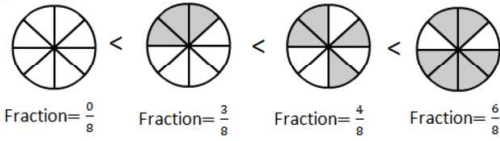


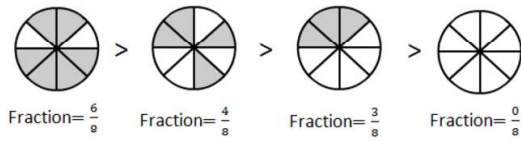
Fig. 6.29

Ans :

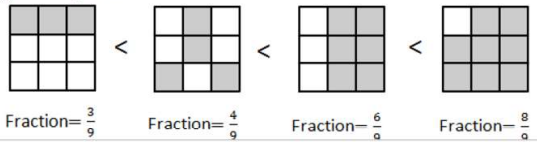
(i) Ascending order



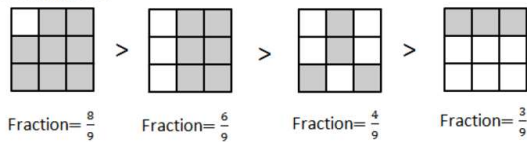
Descending order



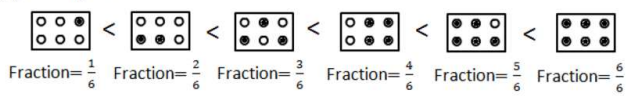
(ii) Ascending order



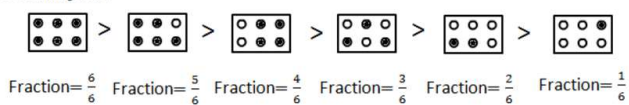
Descending order



(iii) Ascending order



Descending order



Q2. Mark $\frac{2}{6}$, $\frac{4}{6}$, $\frac{8}{6}$, $\frac{6}{6}$ on the number line and put appropriate signs between fractions given below :

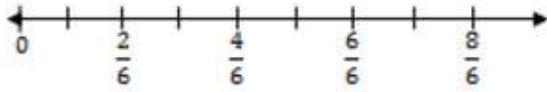
i) $\frac{5}{6}$ _____ $-\frac{2}{6}$

ii) $\frac{3}{6}$ _____ $-\frac{0}{6}$

iii) $\frac{1}{6}$ _____ $-\frac{6}{6}$

iv) $\frac{8}{6}$ _____ $-\frac{5}{6}$

Ans :



i) $56 > 26$ because $5 > 2$ and the denominator is the same.

ii) $36 > 06$ because $3 > 0$ and the denominator is the same.

iii) $16 < 66$ because $6 > 1$ and the denominator is the same.

iv) $86 > 56$ because $8 > 5$ and the denominator is the same.

Q3. Compare the following fractions and put an appropriate :

i) $\frac{3}{6}$ ——— $\frac{5}{6}$

ii) $\frac{4}{5}$ ——— $\frac{0}{5}$

iii) $\frac{3}{20}$ ——— $\frac{4}{20}$

iv) $\frac{1}{7}$ ——— $\frac{1}{4}$

Ans :

i) $36 < 56$ because $3 < 5$ and the denominator is the same.

ii) $45 > 05$ because $4 > 0$ and the denominator is the same.

iii) $320 < 420$ because $3 < 4$ and the denominator is the same.

iv) $17 < 14$ because $7 > 4$; if the numerator is the same, then the fraction that has smaller denominator is greater.

Q4. Compare the following fractions using the symbol $>$ or $<$:

i) $\frac{6}{7}$ and $\frac{6}{11}$

ii) $\frac{3}{7}$ and $\frac{5}{7}$

iii) $\frac{2}{3}$ and $\frac{8}{12}$

iv) $\frac{1}{5}$ and $\frac{4}{15}$

v) $\frac{8}{3}$ and $\frac{8}{13}$

vi) $\frac{4}{9}$ and $\frac{15}{8}$

Ans :

i) $\frac{6}{7} > \frac{6}{11}$ because if the numerator is the same, then the fraction with smaller denominator is greater.

ii) $\frac{3}{7} < \frac{5}{7}$ because $3 < 5$ and the denominator is the same.

iii) $\frac{8}{12} = \frac{2 \times 2 \times 2}{2 \times 2 \times 3} = \frac{2}{3}$ therefore, $\frac{2}{3} = \frac{8}{12}$

iv) $\frac{1}{5} = \frac{1}{5} \times \frac{3}{3} = \frac{3}{15}$, therefore $\frac{3}{15} < \frac{4}{15}$ (Because $3 < 4$ and the denominator is the same.

Therefore, $\frac{1}{15} < \frac{4}{15}$)

v) $\frac{8}{3} < \frac{8}{13}$ Because if the numerator is the same, then the fraction with smaller denominator is greater.

vi) $\frac{4}{9} = \frac{4}{9} \times \frac{8}{8} = \frac{32}{72}$

$\frac{15}{8} = \frac{15}{8} \times \frac{9}{9} = \frac{135}{72} > \frac{32}{72}$

(Because $135 > 32$ and the denominator is the same)

Therefore, $\frac{4}{9} < \frac{15}{8}$

Q 5. The following fractions represent just three different numbers. Separate them in to three groups of equal fractions by changing each one to its simplest form:

i) $\frac{2}{12}$

ii) $\frac{3}{15}$

iii) $\frac{8}{50}$

iv) $\frac{16}{100}$

v) $\frac{10}{60}$

vi) $\frac{15}{75}$

vii) $\frac{12}{60}$

viii) $\frac{16}{96}$

ix) $\frac{12}{75}$

x) $\frac{12}{72}$

xi) $\frac{3}{18}$

xii) $\frac{4}{25}$

Ans :

i) $\frac{2}{12}$

HCF of 2 & 12 is 2.

Divide both the numerator & denominator by the HCF of 2 & 12

$$2 \div \frac{2}{12} \div 2 = \frac{1}{6}$$

ii) $\frac{3}{15}$

HCF of 3 & 15 is 3.

Divide both the numerator & denominator by the HCF of 3 & 15.

$$3 \div \frac{3}{15} \div 3 = \frac{1}{5}$$

iii) $\frac{8}{50}$

HCF of 8 & 50 is 2.

Divide both the numerator & denominator by the HCF of 8 & 50.

$$8 \div \frac{8}{50} \div 2 = \frac{4}{25}$$

iv) $\frac{16}{100}$

HCF of 16 & 100 is 4.

Divide both the numerator & denominator by the HCF of 16 & 100.

$$16 \div \frac{16}{100} \div 4 = \frac{4}{25}$$

v) $\frac{10}{60}$

HCF of 10 & 60 is 10.

Divide both the numerator & denominator by the HCF of 10 & 60.

$$10 \div \frac{10}{60} \div 10 = \frac{1}{6}$$

vi) $\frac{15}{75}$

HCF of 15 & 75 is 15.

Divide both the numerator & denominator by the HCF of 15 & 75.

$$15 \div \frac{15}{75} \div 15 = \frac{1}{5}$$

v) $\frac{12}{60}$

HCF of 12 & 60 is 12.

Divide both the numerator & denominator by the HCF of 12 & 60.

$$12 \div \frac{12}{60} \div 12 = \frac{1}{5}$$

vii) $\frac{16}{96}$

HCF of 16 & 96 is 16.

Divide both the numerator & denominator by the HCF of 16 & 96

$$16 \div \frac{16}{96} \div 16 = \frac{1}{6}$$

viii) $\frac{12}{75}$

HCF of 12 & 75 is 3.

Divide both the numerator & denominator by the HCF of 12 & 75.

$$12 \div \frac{3}{75} \div 3 = \frac{4}{25}$$

ix) $\frac{12}{72}$

HCF of 12 & 72 is 12.

Divide both the numerator & denominator by the HCF of 12 & 72

$$12 \div \frac{12}{72} \div 12 = \frac{1}{6}$$

x) $\frac{3}{18}$

HCF of 3 & 18 is 3.

Divide both the numerator & denominator by the HCF of 3 & 18.

$$3 \div \frac{3}{18} \div 3 = \frac{1}{6}$$

xi) $\frac{4}{25}$

HCF of 4 & 25 is 1.

Divide both the numerator & denominator by the HCF of 4 & 25

$$4 \div \frac{1}{25} \div 1 = \frac{4}{25}$$

Three groups of equal fractions :

$$\frac{2}{12}, \frac{10}{60}, \frac{16}{96}, \frac{12}{72}, \frac{3}{18}, \frac{3}{15}, \frac{8}{50}, \frac{16}{100}, \frac{15}{75}, \frac{12}{60}, \frac{12}{75}, \frac{4}{25}$$

Q 6 . Isha read 25 pages of a book containing 100 pages. Nagma read $\frac{1}{2}$ of the same book. Who read less ?

ANS :

Total pages in the book = 100

$$\text{Fraction of the book read by Isha} = 25 \div \frac{25}{100} \div 25 = \frac{1}{4}$$

(Dividing numerator & denominator by the HCF of 25 & 100)

Fraction of the book read by Nagma = $\frac{1}{2}$

Now, compare $\frac{1}{4}$ & $\frac{1}{2}$.

LCM of 4 & 2 is 4.

Convert each fraction into equivalent fraction with 4 as its denominator.

$$1 \times \frac{1}{4} \times 1 \text{ and } 1 \times \frac{2}{2} \times \frac{2}{14} \text{ and } \frac{1}{4} = \frac{2}{4}$$

Therefore, Isha read less.

Q 7. Arrange the following fractions in the ascending order :

i) $\frac{2}{9}, \frac{7}{9}, \frac{3}{9}, \frac{4}{9}, \frac{1}{9}, \frac{6}{9}, \frac{5}{9}$

ii) $\frac{7}{8}, \frac{7}{25}, \frac{7}{11}, \frac{7}{18}, \frac{7}{10}$

iii) $\frac{37}{47}, \frac{37}{50}, \frac{37}{100}, \frac{37}{100}, \frac{37}{85}, \frac{37}{41}$

iv) $\frac{3}{5}, \frac{1}{5}, \frac{4}{5}, \frac{2}{5}$

v) $\frac{2}{5}, \frac{3}{4}, \frac{1}{2}, \frac{3}{5}$

vi) $\frac{3}{8}, \frac{3}{12}, \frac{3}{6}, \frac{3}{4}$

vii) $\frac{4}{6}, \frac{3}{8}, \frac{6}{12}, \frac{5}{16}$

Ans :

i) $\frac{2}{9}, \frac{7}{9}, \frac{3}{9}, \frac{4}{9}, \frac{1}{9}, \frac{6}{9}, \frac{5}{9}$, when the denominators are the same and numerators are different, then the fraction with greater numerator has a larger value.

ii) $\frac{7}{8}, \frac{7}{25}, \frac{7}{11}, \frac{7}{18}, \frac{7}{10}$, when numerator are the same and denominators are different, the fraction with greater denominator has a smaller value.

iii) $\frac{37}{47}, \frac{37}{50}, \frac{37}{100}, \frac{37}{100}, \frac{37}{85}, \frac{37}{41}$

When numerators are the same and denominator has a smaller value.

iv) $\frac{3}{5}, \frac{1}{5}, \frac{4}{5}, \frac{2}{5}$

When denominators are the same and numerators are different, then the fraction with greater numerator has a larger value.

v) LCM of 2, 4 and 5 is 20

$$\frac{2}{5} = \frac{2}{5} \times \frac{4}{4} = \frac{8}{20}$$

$$\frac{3}{4} = \frac{3}{4} \times \frac{5}{5} = \frac{15}{20}$$

$$\frac{2}{5} = \frac{2}{5} \times \frac{4}{4} = \frac{8}{20}$$

$$(vi) \frac{3}{12}, \frac{3}{8}, \frac{3}{6}, \frac{3}{4}$$

$$(vii) \frac{5}{16}, \frac{3}{8}, \frac{6}{12}, \frac{4}{6}$$

Q 8. Arrange in descending order in each of the following using symbols > :

i) $\frac{8}{17}, \frac{8}{9}, \frac{8}{5}, \frac{8}{13}$

ii) $\frac{5}{9}, \frac{3}{12}, \frac{1}{3}, \frac{4}{15}$

Ans 8)

$$(i) \frac{8}{5} > \frac{8}{9} > \frac{8}{13} > \frac{8}{17}$$

$$(ii) \frac{5}{9} > \frac{1}{3} > \frac{3}{12} > \frac{4}{15}$$

Q 9 . Find answers to the following. Write and indicate how you solved them.

i) Is $\frac{5}{9}$ equal to $\frac{4}{5}$?

ii) Is $\frac{9}{16}$ equal to $\frac{5}{9}$?

iii) Is $\frac{4}{5}$ equal to $\frac{16}{20}$?

iv) Is $\frac{1}{15}$ equal to $\frac{4}{30}$?

Ans. 9)