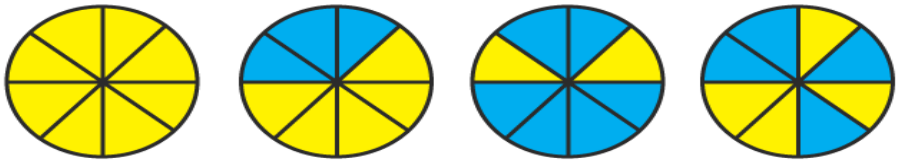
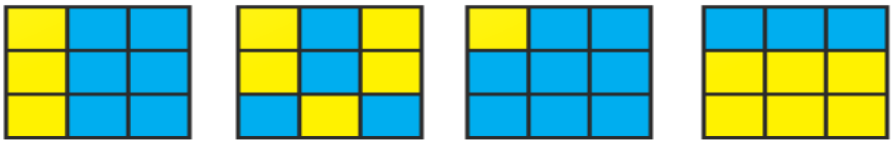
EXERCISE 6.7 PAGE: 6.24

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

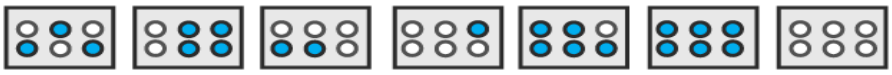
(i)



(ii)

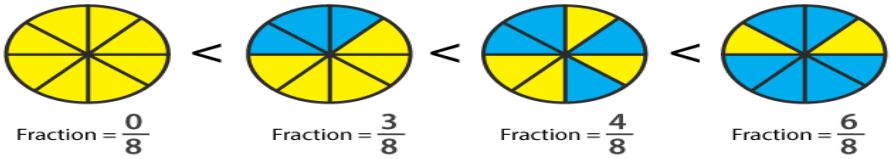


(iii)

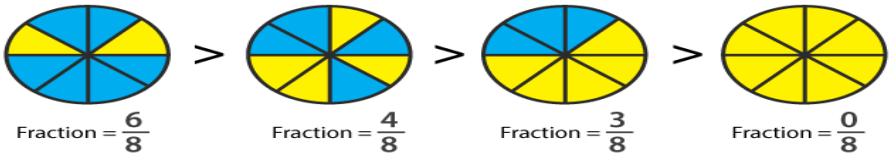


Solution:

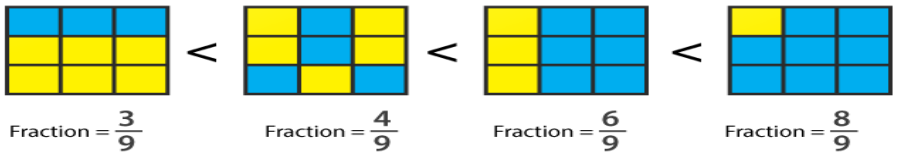
(i)Ascending order



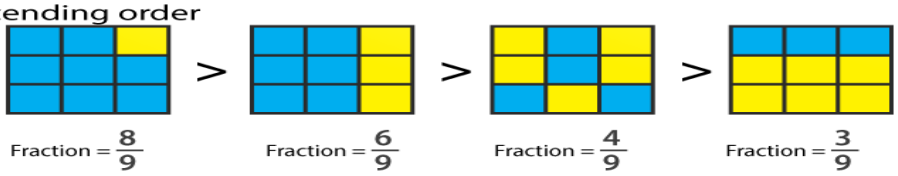
Descending order



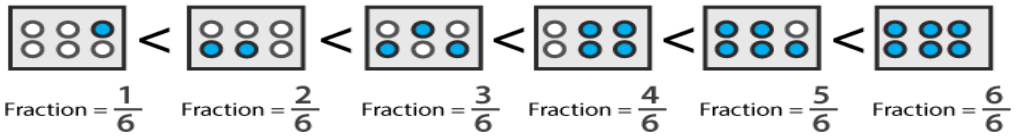
(ii)Ascending order



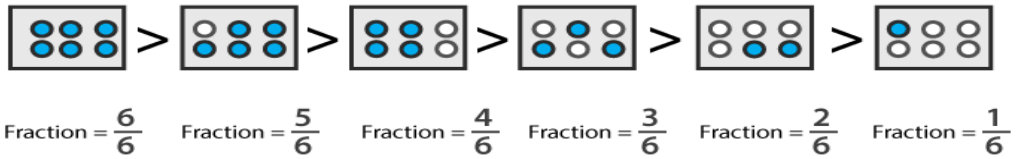
Descending order



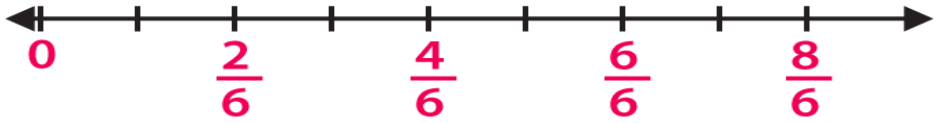
(iii)Ascending order



Descending order



2. Mark 2/6, 4/6, 8/6 and 6/6 on the number line and put appropriate signs between fractions given below:
(i) 5/6 …….. 2/6
(ii) 3/6 ……. 0/6
(iii) 1/6 …… 6/6
(iv) 8/6 …… 5/6
Solution:



(i) We know that
5/6 > 2/6 as 5 > 2 and the denominator is same.

(ii) We know that
3/6 > 0/6 as 3 > 0 and the denominator is same.

(iii) We know that
1/6 < 6/6 as 6 > 1 and the denominator is same.

(iv) We know that
8/6 > 5/6 as 8 > 5 and the denominator is same.

3. Compare the following fractions and put an appropriate sign:
(i) 3/6 …… 5/6
(ii) 4/5 …… 0/5
(iii) 3/20 …… 4/20
(iv) 1/7 ……. 1/4
Solution:

(i) We know that
3/6 < 5/6 as 3 < 5 and the denominator is same.

(ii) We know that
4/5 > 0/5 as 4 > 0 and the denominator is same.

(iii) We know that
3/20 < 4/20 as 3 < 4 and the denominator is same.

(iv) We know that
1/7 < 1/4 as 7 > 4 and the fraction having smaller denominator is larger.

4. Compare the following fractions using the symbol > or <:
(i) 6/7 and 6/11
(ii) 3/7 and 5/7
(iii) 2/3 and 8/12
(iv) 1/5 and 4/15
(v) 8/3 and 8/13
(vi) 4/9 and 15/8
Solution:

(i) We know that
6/7 > 6/11 as the fraction having smaller denominator is larger.

(ii) We know that
3/7 < 5/7 as 3 < 5 and the denominator is same.

(iii) We know that
8/12 = (2 × 2 × 2)/ (2 × 2 × 3) = 2/3
Hence, 2/3 = 8/12

(iv) We know that
1/5 = (1/ 5) × (3/3) = 3/15 which is lesser than 4/15
Hence, 1/5 < 4/15

(v) We know that
8/3 > 8/13 as the fraction having smaller value of denominator is larger.

(vi) We know that
4/9 = (4/9) × (8/8) = 32/72
15/8 = (15/8) × (9/9) = 135/72
So we get 32/72 < 135/72
Hence, 4/9 < 15/8.

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) 2/12
(ii) 3/15
(iii) 8/50
(iv) 16/100
(v) 10/60
(vi) 15/75
(vii) 12/60
(viii) 16/96
(ix) 12/75
(x) 12/72

(xi) 3/18
(xii) 4/25
Solution:

(i) 2/12
We know that HCF of 2 and 12 = 2
By dividing numerator and denominator by HCF of 2 and 12
2/12 ÷ 2/2 = 1/6

(ii) 3/15
We know that HCF of 3 and 15 = 3
By dividing numerator and denominator by HCF of 3 and 15
3/15 ÷ 3/3 = 1/5

(iii) 8/50
We know that HCF of 8 and 50 = 2
By dividing numerator and denominator by HCF of 8 and 50
8/50 ÷ 2/2 = 4/25

(iv) 16/100
We know that HCF of 16 and 100 = 4
By dividing numerator and denominator by HCF of 16 and 100
16/100 ÷ 4/4 = 4/25

(v) 10/60
We know that HCF of 10 and 60 = 10
By dividing numerator and denominator by HCF of 10 and 60
10/60 ÷ 10/10 = 1/6

(vi) 15/75
We know that HCF of 15 and 75 = 15
By dividing numerator and denominator by HCF of 15 and 75
15/75 ÷ 15/15 = 1/5

(vii) 12/60
We know that HCF of 2 and 12 = 12
By dividing numerator and denominator by HCF of 2 and 12
12/60 ÷ 12/12 = 1/5

(viii) 16/96
We know that HCF of 16 and 96 = 16
By dividing numerator and denominator by HCF of 16 and 96
16/96 ÷ 16/16 = 1/6

(ix) 12/75
We know that HCF of 12 and 75 = 3
By dividing numerator and denominator by HCF of 12 and 75
12/75 ÷ 3/3 = 4/25

(x) 12/72

We know that HCF of 12 and 72 = 12
By dividing numerator and denominator by HCF of 12 and 72
12/72 ÷ 12/12 = 1/6

(xi) 3/18
We know that HCF of 3 and 18 = 3
By dividing numerator and denominator by HCF of 3 and 18
3/18 ÷ 3/3 = 1/6

(xii) 4/25
We know that HCF of 4 and 25 = 1
By dividing numerator and denominator by HCF of 4 and 25
4/25 ÷ 1/1 = 4/25

Three groups of equal fractions: 2/12, 10/60, 16/96, 12/72, 3/18, 3/15, 15/75, 12/60, 8/50, 16/100, 12/75, 4/25

6. Isha read 25 pages of a book containing 100 pages. Nagma read ½ of the same book. Who read less?
Solution:

No. of pages in the book = 100
We know that
Fraction of book Isha read = (25/100) ÷ (25/25) = 1/4 by dividing both numerator and denominator by HCF of 25 and 100
So the fraction of book Nagma read = 1/2
By comparing 1/4 and 1/2 we get the LCM of 4 and 2 = 4
Now convert the fraction into equivalent fraction having denominator as 4
1/4 × 1/1 and 1/2 × 2/2
1/4 < ½

Hence, Isha read less.

7. Arrange the following fractions in the ascending order:
(i) 2/9, 7/9, 3/9, 4/9, 1/9, 6/9, 5/9
(ii) 7/8, 7/25, 7/11, 7/18, 7/10
(iii) 37/47, 37/50, 37/100, 37/1000, 37/85, 37/41
(iv) 3/5, 1/5, 4/5, 2/5
(v) 2/5, 3/4, 1/2, 3/5
(vi) 3/8, 3/12. 3/6, 3/4
(vii) 4/6, 3/8, 6/12, 5/16
Solution:

(i) 2/9, 7/9, 3/9, 4/9, 1/9, 6/9, 5/9 can be written in ascending order as
1/9, 2/9, 3/9, 4/9, 5/9, 6/9, 7/9

(ii) 7/8, 7/25, 7/11, 7/18, 7/10 can be written in ascending order as
7/25, 7/18, 7/11, 7/10, 7/8

(iii) 37/47, 37/50, 37/100, 37/1000, 37/85, 37/41 can be written in ascending order as
37/1000, 37/100, 37/85, 37/50, 37/47, 37/41

(iv) 3/5, 1/5, 4/5, 2/5 can be written in ascending order as
1/5, 2/5, 3/5, 4/5

(v) 2/5, 3/4, 1/2, 3/5 can be written in ascending order as
2/5, 1/2, 3/5, 3/4

(vi) 3/8, 3/12, 3/6, 3/4 can be written in ascending order as
3/12, 3/8, 3/6, 3/4

(vii) 4/6, 3/8, 6/12, 5/16 can be written in ascending order as
5/16, 3/8, 6/12, 4/6

8. 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
(iii) 2/7, 11/35, 9/14, 13/28
Solutions:

(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 > 4/15> 3/12

(iii) 2/7, 11/35, 9/14, 13/28 can be written in the descending order as
9/14 > 13/28 > 11/35 > 2/7

9. Find answers to the following. Write and indicate how you solved them.
(i) Is 5/9 equal to 4/5?
(ii) Is 9/16 equal to 5/9?
(iii) Is 4/5 equal to 16/20?
(iv) Is 1/15 equal to 4/30?
Solution:

(i) No. We know that $5 \times 5 \neq 9 \times 4$

(ii) No. We know that $9 \times 9 \neq 16 \times 5$

(iii) Yes. We know that $4 \times 20 = 16 \times 5$

(iv) No. We know that $1 \times 30 \neq 15 \times 4$