$S=\pi r^2$

$S=\frac{1}{2}a\cdot h$

4

MathsTime

A Textbook **of Mathematics**

Unit-I : Number System

1. 5 and 6-Digit Numbers

Exercise 1.1

  1. 18,960   **2.** 90,098   **3.** 60,000
  4. 15,131; fifteen thousand one hundred thirty one
  5. 22,000; twenty two thousand
  6. 30,500; thirty thousand five hundred
  7. 55,999; fifty five thousand nine hundred ninety nine
  8. 32,351   **9.** 59,809 10. 70,099   **11.** 62100
12. 80001   **13.** 30000   **14.** 40219   **15.** 41350
16. 90100   **17.** 55207   **18.** 90096   **19.** 49999
20. 56199   **21.** 18959   **22.** 23457   **23.** 4,000
24. 70,000   **25.** 90   **26.** 100   **27.** 700
28. 60

Exercise 1.2

  1. 1,62,802; one lakh sixty two thousand eight hundred two
  2. 3,00,698; three lakh six hundred ninety eight
  3. 8,20,036; eight lakh twenty thousand thirty six
  4. 8,00,052; eight lakh fifty two
  5. 4,09,051,   **6.** 8,22,084   **7.** 5,19,302,
  8. 9,02,516   **9.** 5,10,938   **10.** 7,08,870
11. 4,82,561   **12.** 1,05,900   **13.** 9,90,000
14. 8,21,000   **15.** 5,10,067
16. 2,12,349, 17. 4,06,730
18. 4,05,299   **19.** 8,19,999   **20.** 4,99,999
21. 4,82,559; 4,82,560; 4,82,561; 4,82,562
22. 3,01,847; 3,01,848; 3,01,849; 3,01,850
23. 1,05,990; 1,05,991; 1,05,992; 1,05,993
24. 3000   **25.** 10,000   **26.** 40,000
27. 400000   **28.** 5   **29.** 9000
30. 400   **31.** 20

Exercise 1.3

  1. 90   **2.** 9000   **3.** 90000
  4. 900   **5.** 90   **6.** 90000

7. 10000 + 6000 + 500 + 40 + 3
8. 30000 + 4000 + 500 + 10 + 9
9. 40000 + 6000 + 700 + 40 + 3
10. 400000 + 30000 + 6000 + 10 + 4
11. 600000 + 80000 + 8000 + 800 + 8
12. 25738   13. 46457   14. 87020
15. 560579   16. 895908   17. ten thousands
18. hundreds   19. 10 times   20. 0
21. 0   22. 6   23. 4
24. 2   25. 4   26. 3
27. 60,000; 600   28. to   31. Do Yourself

Exercise 1.4

1. (a) <   (b) >   (c) >   (d) <
2. (a) 8664   (b) 87609
3. (a) 49307   (b) 89760
4. (a) 85220   (b) 306789
5. (a) 4921; 5015; 12576; 12756
   (b) 6606; 60666; 66066; 66606;
   (c) 5500; 50055; 75231; 78801
6. (a) 28036; 27005; 12871; 3426
   (b) 79760; 79076; 77609; 7806
   (c) 99900; 99009; 90909; 90099
7. (a) 4, 3, 5, 7, 1, 4 (b) 2, 9, 0, 5, 6, 7
8. (a) 60   (b) 7,00,000   (c) 40,000   (d) 9000
   (e) 30   (f) 8,00,000
9. (a) 2,00,000 + 10,000 + 2,000 + 300 + 50
   (b) 1,00,000 + 4000 + 600 + 90 + 5
   (c) 1,00,000 + 20,000 + 5000 + 700 + 30 + 5
   (d) 1,00,000 + 7,000 + 900 + 8
   (e) 5,00,000 + 10,000 + 8000 + 300 + 6
10. (a) 4,49,326   (b) 1,07,918   (c) 3,90,576
    (d) 5,38,054   (e) 8,63,100
11. (a) lakhs   (b) thousands   (c) 10 times
    (d) 6 digits   (e) 0
12. 5,00,000; 500.
13. Do yourself
14. (a) 1,03,478; 8,74,310   (b) 3,04,789; 9,87,430
    (c) 2,33,488; 8,84,332   (d) 1,01,126; 6,21,110
15. (a) descending   (b) ascending
    (c) ascending   (d) descending.

2

1. (a) 212,350   (b) 435,714   (c) 300,698
   (d) 210,068   (e) 725,000   (f) 823,600
2. (a) 400,028   (b) 642,003   (c) 500,629
   (d) 124,832   (e) 280,009   (f) 818,808
3. (a) 1,24,832   (b) 8,08,818   (c) 9,30,143
   (d) 2,40,682   (e) 4,06,731   (f) 1,96,021
4. (a) One hundred thirty seven thousand six hundred eighty four
   (b) Four hundred seventeen thousand five hundred thirty four
   (c) Six hundred eighty thousand five hundred fifteen
   (d) Five hundred ninety two thousand sixty seven
   (e) Eight hundred ninety six thousand nine hundred thirty
5. (a) 230,118   (b) 361,243   (c) 606;660
   (d) 400,951   (e) 822,084
6. (a) 800,000 + 70,000 + 2,000 + 100 + 70 + 9
   (b) 200,000 + 40,000 + 3,000 + 10 + 8
   (c) 600,000 + 6,000 + 60 + 6
   (d) 200,000 + 50,000 + 1,000 + 30 + 4
   (e) 900,000 + 9,000 + 900 + 90 + 9
7. (a) 515,106   (b) 840,254   (c) 102,108
   (d) 899,090   (e) 357, 057
8. (a) 458,431; 642,589; 824,941; 824,951
   (b) 709,900; 750,006; 760,420; 770,750
   (c) 457,254; 480,100; 482,400, 593,000.

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Unit-II : Fundamental Operations

2.   Addition

Exercise 2.1

1. 28,106	2. 88,953	3. 26,795
4. 85,341	5. 5,86,124	6. 3,05,851
7. 1,82,444	8. 68,403	9. 2,38,083,
10. 2,10,578	11. 1,24,675	12. 1,58,403
13. 5,34,218	14. 10,521	15. 16,564

Exercise 2.2

1. 94,333	**2.** 58,730	**3.** 7,44,370
4. 5,13,552	**5.** 4,52,361	**6.** 8,57,440
7. 5,08,706	**8.** 6,77,269	**9.** 3,43,000
10. 74,500	**11.** 25,750	**12.** 78,120
13. 1,42,540	**14.** 33,249	**15.** 1,09,998
16. 74,701	**17.** 1,52,186	**18.** 30,359
19. 45,488	**20.** 79,228	**21.** 6,95,000
22. 9,26,555	**23.** 86,665	**24.** 70,001
25. 1,14,487	**26.** 5,57,396	

Exercise 2.3

1. Number of English books = 35,898
Number of Hindi books = 24,478
Number of other languages books = 6,785
Total books in the public library = 35,898 + 24,478 + 6,785
= **67,161**
There are 67,161 books in public library.

2. Total votes for one candidate = 54,295
Total votes for one candidate = 38,689
Total number of votes polled = 54,295 + 38,689 = **92,984**
Total votes polled were 92,984.

3. Total number of men in a rally = 35,794
Total number of women in a rally = 36,985
Total number of people = 35,794 + 36,985 = **72,779**
Total of 72,779 people were there.

4. Total number of wheat bags = 26,578
Total number of rice bags = 46,787
Total number of sugar bags = 15,689
Total number of bags in godown = 26,578 + 46,787 + 15,689
= **89,054**
There are 89,054 bags in godown.

5. Number of scooters made by company = 37,589
Number of mopeds made by company = 25,478
Total number of vehicles made = 37,589 + 25,478 = **63,067**
Total vehicles made by ABC Company is 63,067.

6. Cost of a colour TV = ₹ 19,995
Cost of a fridge = ₹ 12,995
Total cost of TV and fridge = 19,995 + 12,995 = ₹ **32,990**
Total cost of TV and fridge is ₹ 32,990.

7. Number of men = 3,46,870
Number of women = 2,99,474
Number of childern = 1,75,077
Total population of the town = 3,46,870 + 2,99,474 + 1,75,077
= **8,21,421**
Thus, total population of town is 8,21,421.

8. Amount collected for Army Help Fund from first city = ₹ 3,91,738
Amount collected from second city = ₹ 2,30,519
Amount collected from third city = ₹ 2,10,255
Total amount collected = 3,91,738 + 2,30,519 + 2,10,255
= ₹ **8,32,512**
Total amount collected for Army Help Fund is ₹ 8,32,512.

9. Cost of a shop = ₹ 2,35,465
Cost of a house = ₹ 2,35,465 + 1,07,475
= ₹ **3,42,940**
Total cost of a house and a shop = ₹ 2,35,465 + ₹ 3,42,490
= ₹ **5,78,405**
Total cost of a house and a shop is ₹ 5,78,405.

10. Amount of sugar produced by first factory = 38,014 bags
Amount of sugar produced by second factory = 53,482 bags
Amount of sugar produced by third factory = 9,578 bags
Total amount of sugar produced = 38,014 + 53,482 + 9,578
= **1,01,074 bags**
There were 1,01,074 bags of sugar produced in a year by three factories.

11. Milk sold in first month = 3,40,775 L
Milk sold in second month = 3,31,212 L
Milk sold in third month = 2,25,819 L
Total amount of milk sold in three months.
= 3,40,775 + 3,31,212 + 2,25,819
= **8,97,806 L**
Total milk sold by milk dairy in three months is 8,97,806 L.

12. Number of deers = 50,817
Number of rabbits = 17,034
Number of other animals = 20,975
Total number of animals = 50,817 + 17,034 + 20,975
= **88,826**
There are total 88,826 animals in national park.

1. 1	**2.** 4529	**3.** 23
4. 14	**5.** 1	**6.** 64
7. 37808	**8.** 58753	**9.** 97030
10. 89875	**11.** 60 + 70, 130, 128	
12. 300 + 400, 700, 740		**13.** 4000 + 5000, 9000, 9272
14. 70 + 50, 120, 116		**15.** 500 + 300, 800, 733
16. 4000 + 6000, 10000, 10670		
17. 69	**18.** 51	**19.** 361
20. 373	**21.** 859	**22.** 1232
23. 539	**24.** 942	**25.** 847 ❑

3. Subtraction

Exercise 3.1

1. 1,82,424	**2.** 28,006	**3.** 82,334
4. 87,943	**5.** 1,75,124	**6.** 2,94,851
7. 25,785	**8.** 88,403	**9.** 1,34,570
10. 1,58,393	**11.** 1,16,564	**12.** 3,34,218
13. 2,27,983	**14.** 1,27,906	

Exercise 3.2

1. 8179	**2.** 28,878	**3.** 17,689
4. 17,957	**5.** 20,769	**6.** 42,486
7. 97,413	**8.** 1,88,594	**9.** 3,17,406
10. 2,80,984,	**11.** 97,864	**12.** 2,87,969

Exercise 3.3

1. 2328	**2.** 26,796	**3.** 11,249
4. 25,258	**5.** 31,229	**6.** 45,637
7. 16,786	**8.** 9,760	**9.** 29,009
10. 68,889	**11.** first line 8; second line 7, 7	
12. 1,76,738	**13.** 36,868	**14.** 97,021
15. 4872	**16.** 18,180	**17.** 16,493
18. 10,244	**19.** 10,500	**20.** 6,64,400
21. 3940	**22.** 4600	**23.** 16,600

Exercise 3.4

1. Total students appeared in an examination = 50,275
Number of students passed = 35,486

Number of students failed = 50,275 − 35,486 = **14,789**
Thus, 14,789 students failed.

2. Population of a town = 96,954
Population less than one lakh = 1,00,000 − 96,954 = **3,046**
Population is 3,046 less than one lakh.

3. Total population of town = 64,935
Number of males = 35,947
∴ Number of females = 64,935 − 35,947 = **28,988**
There are 28,988 females in the town.

4. Earning of an officer = ₹ 1,52,340
Expenditure of an officer = ₹ 1,07,545
Money saved by him = ₹ 1,52,340 − 1,07,545 = ₹ **44,795**
He saved ₹ 44,795 in one year.

5. Books of mathematics published = 25,000
Books left at the end of the year = 4,374
Number of books sold = 25,000 − 4374 = **20,626**
Total of 20,626 books were sold.

6. Number of tree Mr. Pillai had = 12,474
Number of trees fell in cyclone = 6,875
Number of trees saved = 12,474 − 6,875 = **5,599**
There are 5,599 trees saved.

7. Amount deposited in a bank = ₹ 20,000
Amount withdrew from bank = ₹ 3,450
Amount of money left in account = 20,000 − 3,450 = ₹ **16,550**
There is ₹ 16,550 in Abha's account.

8. Annual sale of company ABC = ₹ 9,28,645
Annual sale of company XYZ = ₹ 8,69,475
Clearly, sale of company ABC is greater than XYZ by
= ₹ 9,28,645 − ₹ 8,69,475 = ₹ **59,170**
Thus, sale of company ABC exceeds XYZ by ₹ 59,170.

9. Total amount of money with Saleena = ₹ 40,000
Cost of a moped = ₹ 13,475
Cost of a colour TV = ₹ 15,728
Amount of money left = 40,000 − (13,475 + 15,728)
= **10,797**
₹ 10,797 were left with Saleena.

10. Total amount of sugar in godown = 8,40,000 kg
Amount of sugar sold on first day = 3,15,742 kg
Amount of sugar sold on second day = 2,90,498 kg
Amount of sugar sold on third day = 1,23,412 kg

Amount of sugar left
= 8,40,000 − (3,15,742 + 2,90,498 + 1,23,412)
= **1,10,348 kg**
There was 1,10,348 kg of sugar left.

11. Population of a city previously = 2,38,796
Population after five years = 4,01,234
Population increased in five years = 4,01,234 − 2,38,796
= **1,62,438**
There was 1,62,438 number of people increased in five years.

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4. Multiplication

Exercise 4.1

1. 0	**2.** 12,789	**3.** 427
4. 6	**5.** 10	**6.** 1,50,000
7. 200	**8.** 546	**9.** 4,52,000
10. 76,450	**11.** 63,280	**12.** 28,070
13. 50,800	**14.** 60,070	**15.** 29,000
16. 55,590	**17.** 50,000	**18.** 6,40,000
19. 5,90,000		

Exercise 4.2

1. 12,300	**2.** 17,600	**3.** 72,000
4. 8,000	**5.** 97,500	**6.** 2,40,000
7. 1,71,500	**8.** 20,000	**9.** 9,12,000
10. 10,000		

11. The cost of 1 table = ₹ 400
The cost of 120 tables = 120 × 400 = ₹ **48,000**
12. Ansh has notes = 62
Each note = ₹ 500
He have total rupees = 62 × 500 = ₹ **31,000**
13. Number of peanuts in each bag = 300
Number of bags = 2,500
Total number of peanuts in all bags = 300 × 2,500 = **7,50,000**
14. Raghav has notes = 615
Each note = ₹ 50
He have total money = 615 × 50 = ₹ **30,750**

15. We know that,

Total days in the month of April = 30

1 day = 24 hrs

1 hour = 60 min

Then, total minutes in the month of April = 30 × 24 × 60

= **43,200 min**

16. Srishti has notes = 25

Each note = ₹ 200

She have total rupees = 25 × 200 = ₹ **5000**

Exercise 4.3

1. 1904	**2.** 18,012	**3.** 71,145
4. 63,674	**5.** 3,27,164	**6.** 1,10,852
7. 3,18,848	**8.** 4,46,042	**9.** 61,056
10. 1,34,136	**11.** 5,05,932	**12.** 3,22,968
13. 34,737	**14.** 4,73,288	**15.** 4,87,930
16. 3,05,232	**17.** 63,114	**18.** 1,40,883
19. 30,618	**20.** 98,440	**21.** 86,801
22. 2,79,840		

Exercise 4.4

1. Total number of sacks of rice in stock = 12,543

Amount of rice in each sack = 15 kg

Total amount of rice in all sacks = 12,543 × 15 = **1,88,145 kg**

There is total 1,88,145 kg of rice in all sacks.

2. Amount of wheat in each bag = 98 kg

Total number of bags = 10,050

Total mass of wheat = 10,050 × 98 = **9,84,900 kg**

There was total of 9,84,900 kg of wheat.

3. Number of ball pens in a carton = 144

Total number of cartons = 85

Total number of ball pens = 144 × 85 = **12,240**

There are 12,240 ball pens in 85 cartons.

4. Number of persons carried by a bus = 75

Number of persons carried by 335 buses = 75 × 335 = **25,125**

Total number of persons carried were 25,125.

5. Company price of a tricycle = ₹ 685

Total number of tricycles purchased by retailer = 225

Total cost of tricycles = 685 × 225 = ₹ **1,54,125**

A retailer pays ₹ 1,54,125 in all.

6. Number of hankies in a packet = 576
   Total packets = 1,225
   Total amount of hankies = 576 × 1,255 = ₹ **7,05,600**
   There were total of ₹ 7,05,600 hankies.

7. Monthly fees of a student in a school = ₹ 175
   Total fees of 857 students = 175 × 857 = **1,49,975**
   Total fees of 857 students is ₹ 1,49,975.

8. Weight of sugar in each sack = 107 kg
   Weight of sugar in 407 sacks = 107 × 407 = **43,549 kg**
   Total weight of sugar is 43,549 kg in all sacks.

9. Number of balloons in each packet = 432
   Number of balloons in 1,275 packets = 432 × 1,275 = **5,50,800**
   There are total 5,50,800 balloons.

10. Number of fans produced daily = 795
    Number of days in a leap year = 366
    Number of holidays = 78
    Days left = 366 − 78 = 288
    Number of fans produced in a leap year = 795 × 288 = **2,28,960**
    There were total 2,28,960 fans produced.

11. Amount of membership fees = ₹ 1,050
    Total number of members = 684
    Total amount collected =1050 × 684 = ₹ **7,18,200**
    Total of ₹ 7,18,200 collected as membership fee.

12. Cost of each television set = ₹ 2,250
    Cost of total 175 television sets = 2,250 × 175 = ₹ **3,93,750**
    Total cost of 175 television sets is ₹ 3,93,750.

13. Total distance travelled by jet plane in an hour = 1,250 km
    Total distance travelled in 18 hours = 1,250 × 18 = **22,500 km**
    Jet travels 22,500 km in 18 hours.

14. Number of bulbs produced per day = 6,450
    In March total days = 31 days
    Total holidays = 5 days
    Days left = 31 − 5 = 26 days
    ∴ Number of bulbs produced in March = 6,450 × 26 = **1,67,700**
    Total number of bulbs produced is 1,67,700.

15. Cost of one bicycle =₹ 1,474
    Number of bicycles = ₹ 175
    Total cost of 175 bicycles =1,474 × 175 = ₹ **2,57,950**

1. 1263	**2.** 936	**3.** 4056
4. 5490	**5.** 13685	**6.** 36306
7. 30320	**8.** 16524	**9.** 10195
10. 3200	**11.** 2400	**12.** 2100
13. 1200	**14.** 54600	**15.** 403200
16. 56100	**17.** 144900	

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5. Division

Exercise 5.1

1. 1	**2.** 0	**3.** 0
4. 10,748	**5.** 4329	**6.** 1
7. 50,040	**8.** 3040	**9.** 12,451
10. 3	**11.** 1	**12.** 0
13. 170	**14.** 1240	**15.** 90; 15
16. 2,576; 16	**17.** 57; 2	**18.** 380; 6
19. 163; 4	**20.** 4,980; 7	**21.** 275; 661

Exercise 5.2

1. 507	**2.** 462	**3.** 242
4. 240, R 4	**5.** 232, R 3	**6.** 841
7. 752	**8.** 754, R 3	**9.** 1419 R 2
10. 1446, R 1	**11.** 1369 R 2	**12.** 574, R 6
13. 544, R 1	**14.** 445, R 5	**15.** 367, R 1

Exercise 5.3

1. 133 R 35	**2.** 137 R 21	**3.** 159 R 4
4. 171 R 18	**5.** 40	**6.** 23 R 7
7. 37 R 7	**8.** 28 R 2	**9.** 163 R 20
10. 113 R 37	**11.** 137 R 40	**12.** 134 R 55
13. 124 R 54	**14.** 102 R 31	**15.** 122 R 19
16. 155 R 20	**17.** 113 R 55	**18.** 101
19. 109 R 56	**20.** 105 R 33	**21.** 108 R 4
22. 130 R 52	**23.** 127 R 48	**24.** 103 R 47
25. 112 R 48	**26.** 105 R 53	**27.** 111 R 57
28. 118 R 76		

Exercise 5.4

1. Total number of trees in a garden = 1,887
   Number of rows = 37
   Number of trees in each row = 1,887 ÷ 37 = **51 trees**
   There are 51 trees in each row.

2. Total train fare = ₹ 6,494
   Number of persons = 34
   Fare of one person = 6,494 ÷ 34 = ₹ **191**
   Fare cost of each person is ₹ 191.

3. Total number of books = 5,559
   Total number of shelves = 51
   Number of books in each shelf = 5,559 ÷ 51 = **109 books**
   There are 109 books in each shelf.

4. Load that one truck can take = 68 bags
   Total load = 4,896 bags
   Number of trucks required = 4,896 ÷ 68 = **72 trucks**
   Total trucks needed are 72.

5. Total number of minutes = 4,980
   1 hr = 60 min
   Number of hours in 4,980 min = 4,980 ÷ 60 = **83 hrs**
   There are 83 hrs in 4,980 min.

6. Total distance travelled = 16,614 km
   Number of hours taken = 18
   Distance travelled each hour = 16,614 ÷ 18 = **923 km**
   Total distance travelled in one hour is 923 km.

7. Cost of 35 tricycles = ₹ 11,410
   Cost of one tricycle = 11,410 ÷ 35 = ₹ **326**
   Thus, cost of one tricycle is ₹ 326.

8. Number of photos from one roll = 24
   Number of rolls required for 1032 photos = 1,032 ÷ 24 = **43**
   I need 43 rolls to take 1032 photos.

9. Total length of a rope = 6,225 m
   Number of bits cut of length 75 m = 6,225 ÷ 75 = **83**
   There were 83 bits in all.

10. Total number of crates = 11,500
    Number of crates in a wagon = 92
    Number of wagons required = 11,500 ÷ 92 = **125**
    Total of 125 wagons are required.

11. Number of students in a school = 2898
    Number of rows made = 46

Number of students in each row = 2,898 ÷ 46 = **63 students**
There are 63 students in each row.

12. Amount of wheat which can be filled in a sack = 97 kg
Total amount of wheat = 9,991 kg
Number of sacks required = 9,991 ÷ 97 = **103**
Total of 103 sacks are required.

13. Cost of 36 watches = ₹ 9,540
Cost of 1 watch = 9,540 ÷ 36 = ₹ **265**
Cost of one watch is ₹ 265.

14. Greatest number of four digits = 9,999
So we divide 9,999 by 95
Quotient = **105**, Remainder = **24**

15. Total number of pearls = 8,574
Number of pearls in each necklace = 24
Number of necklaces made of it = 8,574 ÷ 24
Thus, **357** necklaces were made and **6** pearls were left.

16. Total length of cloth = 310 m
Number of 10 m long pieces of cloth that can be cut = 310 ÷ 10
= **31**
Riya can cut 31 pieces of cloth.

17. Total amount of money = ₹ 4,160
Number of 10 rupee-note = 4,160 ÷ 10 = **416**
Mohan can get 416, 10 rupee-notes.

18. Number of pages in a book = 300
Sania reads pages per day = 10
Number of days required to complete reading = 300 ÷ 10
= **30 days**
She will take 30 days to complete book.

19. Total number of bananas = 208
Total number of persons = 100
Each person share = 208 ÷ 100
Thus, each person will get **2** bananas and **8** bananas will be left.

20. Total amount of money = ₹ 6000
Number of 100 rupee-notes = 6000 ÷ 100 = **60**
There are 60 hundred rupee-notes in ₹ 6000.

21. Total amount of money = ₹ 57,200
Cost of a book = ₹ 100
Number of books that can be purchased = 57,200 ÷ 100 = **572**
Thus, 572 books can be purchased.

22. Total amount of money = ₹ 63,000

Cost of a toy = ₹ 1000

Number of toys that can be purchased = 63,000 ÷ 1000 = **63**

There are 63 toys to be purchased.

23. Total amount of money = ₹ 1,212

Total persons in which it is to be divided = 10

Each person will get = 1,212 ÷ 10

Thus, each person will get ₹ **121** and ₹ **2** will be left.

Exercise 5.5

1. 50	**2.** 25	**3.** 30	**4.** 18	**5.** 17
6. 21	**7.** 18	**8.** 0	**9.** 41	**10.** 7

11. Total number of mangoes = 80

Number of mangoes for each children out of 16 = 80 ÷ 16 = 5

Number of mangoes of 6 children which they kept in a bag

$$= 5 \times 6 = 30$$

Number of mangoes kept in bag by 5 other children (4 each)

$$= 5 \times 4 = 20$$

Total number of mangoes in a bag = 30 + 20 = **50**

There are 50 mangoes in a bag.

12. Total number of rupees to be divided = ₹ 63

No. of girls = 7

Share of each girl = 63 ÷ 7 = ₹ 9

Number of rupees spend by 5 girls (completely) = 5 × 9 = ₹ 45

Number of rupees spend by 2 girls (₹ 3 each) = 2 × 3 = ₹ 6

Total money which they spend together = 45 + 6 = ₹ **51**

Total money of ₹ 51 was spent.

13. Cost of 1 note-book = ₹ 10

Cost of 1 book = 3 × 10 = ₹ 30

∴ Cost of 3 note-books = 30 × 3 = ₹ 90

Cost of 5 note-books = 10 × 5 = ₹ 50

Total cost of 3 books and 5 note-books = 90 + 50 = ₹ **140**

14. Number of flowers used for making garland = 16

Number of flowers used for decorating flower vase = $\dfrac{16}{2} = 8$

Number of flowers used for making 10 garlands = 16 × 10 = 160

Number of flowers used for decorating 5 vases = 8 × 5 = 40 = **200**

Total of 200 flowers are used.

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6.

Unitary Method

1. Cost of 5 litre milk = ₹ 85
   Cost of 1 litre milk = 85 ÷ 5 = ₹ 17
   Cost of 8 litre milk = 17 × 8 = ₹ **136**
   Cost of 8 litre milk is ₹ 136.

2. Cost of 12 notebooks = ₹ 48
   Cost of 1 notebook = 48 ÷ 12 = ₹ 4
   Cost of 15 notebooks = 4 × 15 = ₹ **60**
   Cost of 15 notebooks is ₹ 60.

3. 1 dozen = 12 units
   1 dozen or 12 pencils cost of = ₹ 36
   1 pencil cost = 36 ÷ 12 = ₹ 3
   Cost of 16 pencils = 3 × 16 = ₹ **48**
   Thus, cost of 16 pencils is ₹ 48.

4. Amount of rice in 15 sacks = 435 kg
   Amount of rice in 1 sack = 435 ÷ 15 = 29 kg
   Amount of rice in 7 sacks = 29 × 7 = **203 kg**
   Amount of rice in 7 sacks is 203 kg.

5. Cost of 8 m cloth = ₹ 176
   Cost of 1 m cloth = 176 ÷ 8 = ₹ 22
   Cost of 5 m cloth = 22 × 5 = ₹ **110**
   Cost of 5 m cloth is ₹ 110.

6. Cost of 4 kg of sugar = ₹ 60
   Cost of 1 kg of sugar = 60 ÷ 4 = ₹ 15
   Cost of 10 kg of sugar = 15 × 10 = ₹ **150**
   Thus, cost of 10 kg of sugar is ₹ 150.

7. Cost of 10 kg rice = ₹ 90
   Cost of 1 kg rice = 90 ÷ 10 = ₹ 9
   Cost of 4 kg rice = 9 × 4 = ₹ **36**
   Cost of 4 kg rice is ₹ 36.

8. Distance covered in 5 hours by bicycle rider = 35 km
   Distance covered in 1 hour by bicycle rider = 35 ÷ 5 = 7 km
   Distance covered in 3 hours by bicycle rider = 7 × 3 = **21 km**
   Bicycle rider covers 21 km in 3 hours.

9. Cost of 12 cricket balls = ₹ 36
   Cost of 1 cricket ball = 36 ÷ 12 = ₹ 3
   Cost of 5 cricket balls = 3 × 5 = ₹ **15**
   Cost of 5 cricket balls is ₹ 15.

10. Distance travelled by car in 4 hours = 180 km
    Distance travelled by car in 1 hour = 180 ÷ 4 = 45 km
    Distance travelled by car in 3 hours = 45 × 3 = **135 km**
    Distance travelled by car in 3 hours is 135 km.
11. In 3 hours train travels = 219 km
    In 1 hour train travels = 219 ÷ 3 = 73 km
    In 8 hours train travels = 73 × 8 = **584 km**
    Train travels 584 km in 8 hours.
12. Cost of 5 bundles of sugarcane = ₹ 80
    Cost of 1 bundle of sugarcane = 80 ÷ 5 = ₹ 16
    Cost of 3 bundles of sugarcane = 16 × 3 = ₹ **48**
    Cost of 3 bundles of sugarcane is ₹ 48.
13. In 9 days Richa makes = 279 toys
    In 1 day Richa makes = 279 ÷ 9 = 31 toys
    In 6 days Richa makes = 31 × 6 = **186 toys**
    In 6 days Richa makes 186 toys.
14. Cost of 1 quintal wheat = ₹ 700
    1 quintal = 100 kg
    ∴ Cost of 100 kg wheat = ₹ 700
    Cost of 1 kg wheat = 700 ÷ 100 = ₹ 7
    Cost of 40 kg wheat = 7 × 40 = ₹ **280**
    Cost of 40 kg of wheat is ₹ 280.
15. Cost of 15 kg of vegetable oil = ₹ 465
    Cost of 1 kg of vegetable oil = 465 ÷ 15 = ₹ 31
    Cost of 4 kg of vegetable oil = 31 × 4 = ₹ **124**
    Cost of 4 kg of vegetable oil is ₹ 124.
16. Number of bottles in 4 crates = 80
    Number of bottles in crate = 80 ÷ 4 = 20
    Number of bottles in 12 crates = 20 × 12 = **240**
    There are 240 bottles in 12 crates.
17. In 14 hours an aircraft covers = 1,540 km
    In 1 hour an aircraft covers = 1,540 ÷ 14 = 110 km
    In 8 hours an aircraft covers = 110 × 8 = **880 km**
    An aircraft covers 880 km in 8 hours.
18. In 3 days factory produces = 3,750 screws
    In 1 day factory produces = 3,750 ÷ 3 = 1,250 screws
    In 21 days factory produces = 1,250 × 21 = **26,250 screws**
    A factory produces 26,250 screws in 21 days.
19. 20 trucks carry = 5000 bags
    1 truck carry = 5000 ÷ 20 = 250 bags

7 trucks carry $= 250 \times 7 =$ **1,750 bags**

7 trucks can carry 1,750 bags.

20. 1 year $= 12$ months

Rent of house for 12 months $=$ ₹ 2,400

Rent of house for 1 month $= 2,400 \div 12 =$ ₹ 200

Rent of house for 3 months $= 200 \times 3 =$ ₹ **600**

Rent of house for 3 months is ₹ 600.

21. Number of rubber bands in 8 packets $= 400$

Number of rubber bands in 1 packet $= 400 \div 8 = 50$

Number of rubber bands in 15 packets $= 50 \times 15 =$ **750**

There are 750 rubber bands in 15 packets.

22. With 15 L of petrol car runs $= 285\,km$

With 1 L of petrol can runs $= 285 \div 15 = 19\,km$

With 10 L of petrol car runs $= 19 \times 10 =$ **190 km**

With 10 L of petrol can runs 190 km.

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Unit-III : Multiples and Factors

7.   Characteristics of Multiples and Factors

Exercise 7.1

1. (a) 8, 16, 24, 32, 40   (b) 12, 24, 36, 48, 60

    (c) 17, 34, 51, 68, 85   (d) 20, 40, 60, 80, 100

    (e) 25, 50, 75, 100, 125

2. (a) 20, 24, 28   (b) 30, 36, 42

    (c) 45, 54, 63   (d) 70, 84, 98

3. 6, 12, 14, 36, 58, 94

4. (a) yes,   (b) yes   (c), no   (d) yes

    (e) yes   (f) no   (g) yes   (h) no

5. 32, 34, 36, 38, 40, 42, 44, 46, 48, 50

6. 7, 15, 21, 55

7. (a) 12, 24   (b) 15, 30   (c) 20, 40

8. 41, 43, 45, 47, 49, 51, 53, 55, 57, 59

9. yes, 6 is a multiple of 2

10. (a) 2   (b) 10   (c) 100   (d) odd   (e) even
(f) 1   (g) 15   (h) 60   (i) 32, 40, 48;
(j) itself

Exercise 7.2

1. (a) 1; 30   (b) 1; 49   (c) 1; 59   (d) 1; 80   (e) 1; 95
2. (a) 3   (b) 2   (c) 1   (d) 4   (e) 6
3. (a) composite   (b) composite   (c) prime
(d) prime   (e) composite   (f) composite
(g) prime   (h) prime   (i) composite
(j) prime
4. (a) no   (b) no   (c) yes   (d) yes   (e) no
5. (a) 3; 4   (b) 2; 8   (c) 5; 5   (d) 6; 7   (e) 8; 10
6. (a) 1, 2, 3, 4, 6, 12,   (b) 1, 3, 5, 15
(c) 1, 2, 3, 4, 6, 8, 12, 24
(d) 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30 60
(e) 1, 2, 4, 19, 38, 76
7. no; 9, 15 and 21 have more than 2 factors, so they are not prime.
8. (a) 1, 2, 5, 10; 2, 5   (b) 1, 2, 3, 4, 6, 12; 2, 3
(c) 1, 2, 7, 14; 2, 7   (d) 1, 2, 3, 6, 9, 18; 2, 3
(e) 1, 2, 11; 22; 2, 11
9. 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37.

Exercise 7.3

1. yes   **2.** no   **3.** no   **4.** no   **5.** yes
6. no   **7.** yes   **8.** no   **9.** yes   **10.** no
11. yes   **12.** no   **13.** no   **14.** yes   **15.** no
16. yes   **17.** no   **18.** yes   **19.** yes   **20.** no
21. no   **22.** yes   **23.** yes   **24.** no   **25.** 2
26. 1   **27.** even   **28.** 5, 15, 25, 35, 45   **29.** no
30. 8

Exercise 7.4

1. yes   **2.** no   **3.** no   **4.** no   **5.** yes
6. yes   **7.** no   **8.** yes   **9.** yes   **10.** no
11. no   **12.** no   **13.** yes   **14.** yes   **15.** yes
16. no   **17.** no; 12, 15, 21   **18.** 4   **19.** yes; 18, 27
20. (a) 1 (b) 2 (c) 0 (d) 3 (e) 2 (f) 1.

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8. Highest Common Factor (HCF)

Exercise 8.1

1. $2 \times 2 \times 2 \times 2 \times 3$
2. $2 \times 2 \times 2 \times 7$
3. $2 \times 2 \times 3 \times 5$
4. $2 \times 2 \times 2 \times 2 \times 2 \times 2$
5. $2 \times 2 \times 2 \times 3$
6. $2 \times 3 \times 5$
7. $2 \times 2 \times 2 \times 5$
8. $2 \times 2 \times 3 \times 3$
9. $2 \times 2 \times 3 \times 7$
10. $2 \times 2 \times 5 \times 5$
11. $2 \times 7 \times 7$
12. $2 \times 2 \times 2 \times 2 \times 2 \times 3$
13. $2 \times 2 \times 2 \times 5$
14. $2 \times 2 \times 11$
15. $2 \times 3 \times 5$
16. $2 \times 2 \times 3 \times 3$
17. $2 \times 7 \times 7$
18. $2 \times 2 \times 5 \times 5$
19. $2 \times 2 \times 2 \times 13$
20. $2 \times 2 \times 3 \times 3 \times 3$
21. $2 \times 2 \times 2 \times 2 \times 7$
22. $2 \times 2 \times 2 \times 3 \times 5$
23. $2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$
24. $2 \times 2 \times 3 \times 11$
25. $2 \times 2 \times 2 \times 3 \times 7$
26. $2 \times 3 \times 3 \times 11$
27. $2 \times 2 \times 2 \times 3 \times 3 \times 3$
28. $2 \times 2 \times 2 \times 2 \times 2 \times 7$
29. $2 \times 3 \times 3 \times 3 \times 3$
30. $2 \times 2 \times 2 \times 5 \times 5$
31. $3 \times 3 \times 5 \times 5$
32. $3 \times 3 \times 3 \times 3 \times 3$

Exercise 8.2

1. 6
2. 4
3. 4
4. 5
5. 7
6. 5
7. 4
8. 8
9. 5
10. 4
11. 5
12. 4
13. co-prime
14. co-prime
15. co-divisible
16. co-prime
17. co-prime
18. co-divisible
19. co-divisible
20. co-prime

Exercise 8.3

1. 6
2. 4
3. 5
4. 3
5. 1
6. 7
7. 8
8. 9
9. 8
10. 16
11. 12
12. 12
13. 8
14. 4
15. 7
16. 7
17. 20
18. 18
19. 20
20. 25
21. 24
22. 16
23. 12
24. 128
25. 4
26. 7
27. 27
28. 4

Exercise 8.4

1. 7
2. 6
3. 1
4. 1
5. 25
6. 1
7. 100
8. 128

9. The HCf of 32 and 80

$$
\begin{array}{r|l}
2 & 32,\ 80 \\ \hline
2 & 16,\ 40 \\ \hline
2 & 8,\ 20 \\ \hline
2 & 4,\ 10 \\ \hline
  & 2,\ 5
\end{array}
$$

All common prime factors of 32 and 80 $= 2 \times 2 \times 2 \times 2$

$$\text{HCF} = \mathbf{16}$$

Thus, the HCf of 32 and 80 is 16. It is a composite number.

10. The HCF of 90 and 108.

$$
\begin{array}{r|l}
2 & 90,\ 108 \\ \hline
3 & 45,\ 54 \\ \hline
3 & 15,\ 18 \\ \hline
  & 5,\ 6
\end{array}
$$

All common prime factors of 90 and 108 $= 2 \times 3 \times 3$

$$\text{HCF} = \mathbf{18}$$

Thus, the HCF of 90 and 108 is 18. It is even.

11. The required number will divide $68 - 4 = 64$ and $116 - 4 = 112$ exactly.

It will be HCF of 64 and 112.

$$
\begin{array}{r|l}
2 & 64,\ 112 \\ \hline
2 & 32,\ 56 \\ \hline
2 & 16,\ 28 \\ \hline
2 & 8,\ 14 \\ \hline
  & 4,\ 7
\end{array}
$$

All common prime factors of 64 and 112 $= 2 \times 2 \times 2 \times 2$

$$\text{HCF} = \mathbf{16}$$

Hence, the required number is 16.

12. We take HCF of 36 and 63.

$$
\begin{array}{r|l}
3 & 36,\ 63 \\ \hline
3 & 12,\ 21 \\ \hline
  & 4,\ 7
\end{array}
$$

All common prime factors of 36 and 63 = 3 × 3

$$\text{HCF} = 3 \times 3 = \mathbf{9}$$

Thus, the greatest number is 9 which divides both 36 and 63 exactly.

13. We take HCF of 391 and 527.

$$
\begin{array}{r|l}
17 & 391,\ 527 \\
\hline
& 23,\ 31
\end{array}
$$

All common prime factors of 391 and 527 = 17

$$\text{HCF} = \mathbf{17}$$

Thus, the greatest number is 17 which divides both 391 and 527 exactly.

14. Three cans contain 16 litres, 20 litres and 28 litres milk. To find the greatest capacity of jug to be used for measuring milk, we take HCF of 16, 20, 28.

$$
\begin{array}{r|l}
2 & 16,\ 20,\ 28 \\
\hline
2 & 8,\ 10,\ 14 \\
\hline
& 4,\ 5,\ 7
\end{array}
$$

All common prime factors of 16, 20, 28 = 2 × 2

∴ $\qquad\qquad\qquad\qquad$ HCF = 2 × 2 = **4**

Thus, greatest capacity of the jug is 4 litres.

15. There are 40, 48 and 64 students in the classes. To find greatest number of students in each row, we take HCF of 40, 48, 64.

$$
\begin{array}{r|l}
2 & 40,\ 48,\ 64 \\
\hline
2 & 20,\ 24,\ 32 \\
\hline
2 & 10,\ 12,\ 16 \\
\hline
& 5,\ 6,\ 8
\end{array}
$$

All common prime factors of 40, 48, 64 = 2 × 2 × 2

∴ $\qquad\qquad\qquad\qquad$ HCF = 2 × 2 × 2 = **8**

Thus, the maximum number of students standing in each row is 8.

16. Dimensions of hall are 36 m long and 15 m broad. To calculate length of greatest rod, we find HCF of 36 and 15.

$$
\begin{array}{r|l}
3 & 36,\ 15 \\
\hline
& 12,\ 5
\end{array}
$$

Common prime factor of 36, 15 = 3

∴ $\qquad\qquad\qquad$ HCF = **3**

Thus, length of greatest rod to measure length and breadth is 3 m.

17. Number of boys and girls are 112 and 96.

To find the greatest number of boys and girls in each team, we take HCF of 112 and 96.

$$
\begin{array}{r|l}
2 & 112,\ 96 \\ \hline
2 & 56,\ 48 \\ \hline
2 & 28,\ 24 \\ \hline
2 & 14,\ 12 \\ \hline
 & 7,\ 6
\end{array}
$$

All common prime factors of 112 and 96 $= 2 \times 2 \times 2 \times 2$

$\therefore$ $\qquad\qquad\qquad\qquad\qquad$ HCF $= 2 \times 2 \times 2 \times 2 = \mathbf{16}$

Thus, the greatest number of boys and girls in each team is 16.

18. Dimensions of a floor are 28 m and 18 m. To find the greatest square tile, we take HCF of 28 and 18.

$$
\begin{array}{r|l}
2 & 28,\ 18 \\ \hline
 & 14,\ 9
\end{array}
$$

Common prime factors of 28 and 18 $= 2$

$\therefore$ $\qquad\qquad\qquad\qquad$ HCF $= \mathbf{2}$

Thus, the side of greatest square tile is 2 m which can be used exactly.

19. Three labourers got ₹ 81, ₹ 135, ₹162 respectively.

To calculate the maximum daily wages, we take HCF of 81, 135 and 162.

$$
\begin{array}{r|l}
3 & 81,\ 135,\ 162 \\ \hline
3 & 27,\ 45,\ 54 \\ \hline
3 & 9,\ 15,\ 18 \\ \hline
 & 3,\ 5,\ 6
\end{array}
$$

All common prime factors of 81, 135 and 162 $= 3 \times 3 \times 3$

$\therefore$ $\qquad\qquad\qquad\qquad\qquad$ HCF $= 3 \times 3 \times 3 = \mathbf{27}$

Thus, the maximum daily wages of labourers is ₹ 27.

20. Length of two ropes are 30 m and 45 m. To find maximum length of each piece, we take HCF of 30 and 45.

$$
\begin{array}{r|l}
3 & 30,\ 45 \\ \hline
5 & 10,\ 15 \\ \hline
 & 2,\ 3
\end{array}
$$

All common prime factors of 30, 45 = 3 × 5

∴   HCF = 3 × 5 = **15**

Thus, the maximum length of each piece is 15 m.

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9.　　　　　Lowest (Least) Common Multiple (LCM)

Exercise 9.1

1. 99	**2.** 35	**3.** 100	**4.** 90	**5.** 80
6. 105	**7.** 120	**8.** 210	**9.** 120	**10.** 80
11. 36	**12.** 150	**13.** 36	**14.** 48	**15.** 168
16. 78	**17.** 104	**18.** 192	**19.** 600	**20.** 216

Exercise 9.2

1. Least number exactly divisible by 15, 20 and 24 is their LCM.

$$
\begin{array}{r|l}
2 & 15,\ 20,\ 24 \\ \hline
2 & 15,\ 10,\ 12 \\ \hline
2 & 15,\ 5,\ 6 \\ \hline
3 & 15,\ 5,\ 3 \\ \hline
5 & 5,\ 5,\ 1 \\ \hline
  & 1,\ 1,\ 1
\end{array}
$$

Thus, LCM of 15, 20 and 24 = 2 × 2 × 2 × 3 × 5 = **120**

2. To calculate smallest number which is exactly divisible by 18, 24 and 40 is their LCM.

$$
\begin{array}{r|l}
2 & 18,\ 24,\ 40 \\ \hline
2 & 9,\ 12,\ 20 \\ \hline
2 & 9,\ 6,\ 10 \\ \hline
3 & 9,\ 3,\ 5 \\ \hline
3 & 3,\ 1,\ 5 \\ \hline
5 & 1,\ 1,\ 5 \\ \hline
  & 1,\ 1,\ 1
\end{array}
$$

∴ LCM of 18, 24 and 40 = 2 × 2 × 2 × 3 × 3 × 5 = **360**

3. First we calculate LCM of 15, 25, 40.

$$
\begin{array}{r|l}
2 & 15, 25, 40 \\ \hline
2 & 15, 25, 20 \\ \hline
2 & 15, 25, 10 \\ \hline
3 & 15, 25, 5 \\ \hline
5 & 5, 25, 5 \\ \hline
5 & 1, 5, 1 \\ \hline
 & 1, 1, 1
\end{array}
$$

LCM $= 2 \times 2 \times 2 \times 3 \times 5 \times 5 = 600$

Required number which will give 14 as remainder $= 600 + 14$
$$= \mathbf{614}$$

4. Least number of toffees is the LCM of 8, 12 and 20.

$$
\begin{array}{r|l}
2 & 8, 12, 20 \\ \hline
2 & 4, 6, 10 \\ \hline
2 & 2, 3, 5 \\ \hline
3 & 1, 3, 5 \\ \hline
5 & 1, 1, 5 \\ \hline
 & 1, 1, 1
\end{array}
$$

The least number of toffees are $= 2 \times 2 \times 2 \times 3 \times 5 = \mathbf{120}$

5. Minimum time after which they will be lighted again is the LCM of 30 and 45.

$$
\begin{array}{r|l}
2 & 30, 45 \\ \hline
3 & 15, 45 \\ \hline
3 & 5, 15 \\ \hline
 & 5, 5
\end{array}
$$

LCM of 30, 45 $= 2 \times 3 \times 3 \times 5 = 90 \, \text{sec} = \mathbf{1 \, min \, 30 \, sec}$
The green light will light again after 1 min 30 sec.

6. The time after which they will ring again is the LCM of 8, 10 and 15.

$$
\begin{array}{r|l}
2 & 8, 10, 15 \\ \hline
2 & 4, 5, 15 \\ \hline
2 & 2, 5, 15 \\ \hline
3 & 1, 5, 15 \\ \hline
5 & 1, 5, 5 \\ \hline
 & 1, 1, 1
\end{array}
$$

LCM of 8, 10, 15 $= 2 \times 2 \times 2 \times 3 \times 5 = 120\,\text{min} =$ **2 hours**

They will ring again after 2 hours i.e., at 2 PM.

7. To find their next ringing time we take the LCM of 10, 20 and 30.

2	10, 20, 30
2	5, 10, 15
3	5, 5, 15
5	5, 5, 5
	1, 1, 1

LCM of 10, 20, 30 $= 2 \times 2 \times 3 \times 5 = 60 =$ **1 hour**

Thus, bells will ring 1 hour *i.e.,* at 1 pm.

8. To find the least number of mangoes, we take the LCM of 30, 40 and 45.

2	30, 40, 45
2	15, 20, 45
2	15, 10, 45
3	15, 5, 45
3	5, 5, 15
5	5, 5, 5
	1, 1, 1

LCM of 30, 40, 45 $= 2 \times 2 \times 2 \times 3 \times 3 \times 5 =$ **360**

The least number of mangoes he has is 360.

9. First we find LCM of 10, 12 and 15.

2	10, 12, 15
2	5, 6, 15
3	5, 3, 15
5	5, 1, 5
	1, 1, 1

LCM of 10, 12 and 15 $= 2 \times 2 \times 3 \times 5 = 60$

Minimum number of toys when 7 toys are left each time $= 60 + 7$

$$= \textbf{67}$$

Renu has 67 toys.

10. Minimum number of marbles in each case in the LCM of 10, 15 and 25.

$$
\begin{array}{r|l}
2 & 10,\ 15,\ 25 \\ \hline
3 & 5,\ 15,\ 25 \\ \hline
5 & 5,\ 5,\ 25 \\ \hline
5 & 1,\ 1,\ 5 \\ \hline
 & 1,\ 1,\ 1
\end{array}
$$

LCM of 10, 15, 25 $= 2 \times 3 \times 5 \times 5 = \mathbf{150}$
The minimum number of marbles in each case $= 150$.

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Unit-IV : Fractional Numbers

10.   Common Fractions

Exercise 10.1

1. $\dfrac{1}{4}, \dfrac{2}{8}, \dfrac{3}{12}, \dfrac{4}{16}, \dfrac{5}{20}$

2. $\dfrac{3}{4}, \dfrac{6}{8}, \dfrac{9}{12}, \dfrac{12}{16}, \dfrac{15}{20}$

3. $\dfrac{2}{5}, \dfrac{4}{10}, \dfrac{6}{15}, \dfrac{8}{20}, \dfrac{10}{25}$

4. $\dfrac{1}{3}, \dfrac{2}{6}, \dfrac{3}{9}, \dfrac{4}{12}, \dfrac{5}{15}$

5. $\dfrac{2}{3}, \dfrac{4}{6}, \dfrac{6}{9}, \dfrac{8}{12}, \dfrac{10}{15}$

6. $\dfrac{5}{9}, \dfrac{10}{18}, \dfrac{15}{27}, \dfrac{20}{36}, \dfrac{25}{45}$

7. $\dfrac{6}{11}, \dfrac{12}{22}, \dfrac{18}{33}, \dfrac{24}{44}, \dfrac{30}{55}$

8. $\dfrac{8}{15}, \dfrac{16}{20}, \dfrac{24}{45}, \dfrac{32}{60}, \dfrac{40}{75}$

9. $\dfrac{3}{7}, \dfrac{6}{14}, \dfrac{9}{21}, \dfrac{12}{28}, \dfrac{15}{35}$

10. $\dfrac{1}{8}, \dfrac{2}{16}, \dfrac{3}{24}, \dfrac{4}{32}, \dfrac{5}{40}$

11. $\dfrac{12}{20}, \dfrac{15}{25}, \dfrac{18}{36}, \dfrac{21}{35}$

12. $\dfrac{20}{32}, \dfrac{25}{40}, \dfrac{30}{48}, \dfrac{35}{56}$

13. $\dfrac{16}{36}, \dfrac{20}{45}, \dfrac{24}{54}, \dfrac{28}{63}$

14. $\dfrac{4}{16}, \dfrac{5}{20}, \dfrac{6}{24}, \dfrac{7}{28}$

15. $\dfrac{4}{24}, \dfrac{5}{30}, \dfrac{6}{36}, \dfrac{7}{42}$

16. $\dfrac{4}{28}, \dfrac{5}{35}, \dfrac{6}{42}, \dfrac{7}{49}$

17. 18   **18.** 5   **19.** 9   **20.** 5   **21.** 2
22. 9   **23.** 12   **24.** 35   **25.** 36   **26.** 6

27. 40   **28.** 4   **29.** $\dfrac{8}{18}$ **30.** $\dfrac{9}{18}$ **31.** $\dfrac{15}{18}$

32. $\dfrac{12}{18}$ **33.** $\dfrac{9}{24}$ **34.** $\dfrac{12}{32}$ **35.** $\dfrac{18}{48}$ **36.** $\dfrac{8}{12}$

37. $\dfrac{12}{18}$ **38.** $\dfrac{6}{9}$

Exercise 10.2

1. yes   **2.** no   **3.** no   **4.** yes   **5.** no

6. no   **7.** yes   **8.** no   **9.** no   **10.** yes

11. $\dfrac{7}{8}$ **12.** $\dfrac{4}{5}$ **13.** $\dfrac{2}{5}$ **14.** $\dfrac{2}{3}$ **15.** $\dfrac{4}{5}$

16. $\dfrac{3}{4}$ **17.** $\dfrac{5}{9}$ **18.** $\dfrac{15}{16}$ **19.** $\dfrac{1}{3}$ **20.** $\dfrac{3}{4}$

21. $\dfrac{1}{3}$ **22.** $\dfrac{1}{2}$ **23.** $\dfrac{2}{3}$ **24.** $\dfrac{1}{2}$

Exercise 10.3

1. $\dfrac{4}{9},\dfrac{3}{15}$ **2.** $\dfrac{15}{7},\dfrac{20}{8},\dfrac{7}{6}$ **3.** $\dfrac{1}{5},\dfrac{1}{7}$ **4.** $1\dfrac{2}{3},5\dfrac{1}{2},7\dfrac{3}{10}$

5. (a) like   (b) like   (c) unlike

6. (a) $\dfrac{35}{30}$ (b) $\dfrac{8}{3}$ (c) $\dfrac{15}{7}$ (d) $\dfrac{6}{12}$ (e) $\dfrac{15}{20}$

7. (a) $48 \div 12$ (b) $15 \div 20$ (c) $6 \div 5$ (d) $9 \div 8$ (e) $10 \div 21$

8. (a) $9\dfrac{1}{3}$ (b) $3\dfrac{2}{5}$ (c) $3\dfrac{5}{7}$ (d) $2\dfrac{6}{10}$ (e) $8\dfrac{1}{4}$

(f) $6\dfrac{1}{8}$ (g) $5\dfrac{6}{7}$ (h) $8\dfrac{1}{10}$ (i) $1\dfrac{7}{9}$ (j) $3\dfrac{5}{18}$

9. (a) $\dfrac{157}{10}$ (b) $\dfrac{7}{2}$ (c) $\dfrac{16}{3}$ (d) $\dfrac{9}{4}$ (e) $\dfrac{26}{3}$

(f) $\dfrac{94}{17}$ (g) $\dfrac{13}{7}$ (h) $\dfrac{49}{8}$ (i) $\dfrac{63}{20}$ (j) $\dfrac{106}{9}$

Exercise 10.4

1. <   **2.** >   **3.** >

4. >   **5.** <   **6.** <

7. $\dfrac{49}{84},\dfrac{36}{84}$ **8.** $\dfrac{35}{40},\dfrac{24}{40}$ **9.** $\dfrac{8}{12},\dfrac{9}{12}$

10. $\dfrac{6}{10},\dfrac{7}{10}$ **11.** $\dfrac{3}{8},\dfrac{10}{8}$ **12.** $\dfrac{6}{9},\dfrac{7}{9}$

13. $\dfrac{13}{14}>\dfrac{11}{12}$ **14.** $\dfrac{5}{8}<\dfrac{7}{10}$ **15.** $\dfrac{3}{5}<\dfrac{5}{7}$

16. $\dfrac{4}{5} < \dfrac{11}{12}$ **17.** $\dfrac{1}{2} < \dfrac{3}{4}$ **18.** $\dfrac{3}{4} > \dfrac{2}{6}$

19. $\dfrac{7}{12}, \dfrac{11}{18}, \dfrac{5}{6}$ **20.** $\dfrac{7}{10}, \dfrac{3}{4}, \dfrac{4}{5}$ **21.** $\dfrac{3}{10}, \dfrac{2}{3}, \dfrac{4}{5}$

22. $\dfrac{5}{6}, \dfrac{2}{3}, \dfrac{3}{5}$ **23.** $\dfrac{2}{3}, \dfrac{11}{18}, \dfrac{4}{9}$ **24.** $\dfrac{3}{4}, \dfrac{9}{16}, \dfrac{1}{2}$

25. $>$ **26.** $<$ **27.** $<$

28. $>$ **29.** $<$ **30.** $<$

31. Quantity of milk that Pihu buys daily $= 2\dfrac{4}{5} \text{L} = \dfrac{14}{5} \text{L}$

Quantity of milk that Mona buys daily $= 2\dfrac{3}{4} \text{L} = \dfrac{11}{4} \text{L}$

To compare both fractions we first have to make the denominator of these fraction same by taking LCM.

$$\dfrac{14}{5}, \dfrac{11}{4}$$

$$\text{LCM of } 5, 4 = 20$$

$$\Rightarrow \qquad \dfrac{14 \times 4,\ 11 \times 5}{20}$$

$$\Rightarrow \qquad \dfrac{56 > 55}{20}$$

$$\Rightarrow \qquad \dfrac{56}{20} > \dfrac{55}{20} \qquad \Rightarrow \qquad \mathbf{\dfrac{14}{5} > \dfrac{11}{4}}$$

Thus, Pihu buys more milk daily.

32. Length of cloth used in Rajan's shirt $= 1\dfrac{2}{5} \text{m} = \dfrac{7}{5} \text{m}$

Length of cloth used in Rao's shirt $= 1\dfrac{3}{7} \text{m} = \dfrac{10}{7} \text{m}$

To compare both fractions we first have to make the denominator of these fraction same by taking LCM.

$$\dfrac{7}{5}, \dfrac{10}{7}$$

$$\text{LCM of 5 and } 7 = 35$$

$$\Rightarrow \qquad \dfrac{7 \times 7,\ 10 \times 5}{35}$$

$$\Rightarrow \qquad \dfrac{49 < 50}{35}$$

$$\Rightarrow \qquad \dfrac{49}{35} < \dfrac{50}{35} \qquad \text{or} \qquad \mathbf{\dfrac{7}{5} < \dfrac{10}{7}}$$

Thus, more cloth is used in Rao's shirt.

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11. Operations in Common Fractions

Exercise 11.1

1. 1
2. $\dfrac{15}{17}$
3. $\dfrac{11}{13}$
4. $\dfrac{5}{7}$
5. $\dfrac{7}{9}$

6. $\dfrac{3}{4}$
7. $\dfrac{7}{9}$
8. $\dfrac{25}{31}$
9. $\dfrac{8}{9}$
10. $1\dfrac{1}{3}$

11. 2
12. $1\dfrac{3}{19}$
13. $1\dfrac{5}{9}$
14. $1\dfrac{2}{9}$
15. $1\dfrac{3}{22}$

16. $1\dfrac{17}{42}$
17. $1\dfrac{9}{28}$
18. $1\dfrac{7}{12}$
19. $\dfrac{5}{6}$
20. $1\dfrac{5}{12}$

21. $1\dfrac{1}{15}$
22. $\dfrac{7}{16}$
23. $1\dfrac{1}{5}$
24. $1\dfrac{9}{16}$
25. $\dfrac{23}{36}$

26. $\dfrac{1}{2}$
27. $\dfrac{11}{56}$

Exercise 11.2

1. $4\dfrac{1}{6}$
2. $4\dfrac{1}{4}$
3. $3\dfrac{7}{24}$
4. 11
5. 7

6. $9\dfrac{9}{20}$
7. $6\dfrac{3}{14}$
8. $3\dfrac{29}{36}$
9. $6\dfrac{11}{28}$
10. $7\dfrac{1}{60}$

11. $8\dfrac{11}{60}$
12. $4\dfrac{7}{16}$
13. $10\dfrac{3}{8}$
14. $3\dfrac{11}{24}$
15. $6\dfrac{17}{30}$

16. $8\dfrac{1}{12}$
17. $9\dfrac{3}{5}$
18. $7\dfrac{1}{12}$

Exercise 11.3

1. Time taken to paint the table $= \dfrac{3}{4}$ hr

   Time taken to paint the chair $= \dfrac{1}{3}$ hr

   Total time taken $= \dfrac{3}{4} + \dfrac{1}{3}$

   LCM of 4 and 3 $= 12$

   $$= \frac{3 \times 3 + 1 \times 4}{12} = \frac{9 + 4}{12} = \frac{13}{12} = \mathbf{1\dfrac{1}{12}}$$

   Ravi took total of $1\dfrac{1}{12}$ hours in all.

2. Amount of money Roma had $= ₹\,2\dfrac{1}{20} = ₹\,\dfrac{41}{20}$

Amount of money given by her sister $= ₹\,1\dfrac{1}{5} = ₹\,\dfrac{6}{5}$

Total money she had now $= \dfrac{41}{20} + \dfrac{6}{5}$

LCM of 20 and 5 $= 20$

$$= \dfrac{41 \times 1 + 6 \times 4}{20} = \dfrac{41 + 24}{20} = \dfrac{65}{20} = \dfrac{13}{4} = \mathbf{3\dfrac{1}{4}}$$

Roma had total of $₹\,3\dfrac{1}{4}$.

3. Part of comic read on Saturday $= \dfrac{3}{5}$

Part of comic read on Sunday $= \dfrac{3}{10}$

Total part of the comic read $= \dfrac{3}{5} + \dfrac{3}{10}$

LCM of 5, 10 $= 10$

$$= \dfrac{3 \times 2 + 3 \times 1}{10} = \dfrac{6 + 3}{10} = \mathbf{\dfrac{9}{10}}$$

Thus, Mona read total of $\dfrac{9}{10}$ part of the comic.

4. Rupees given by Pari's mother $= ₹\,5\dfrac{1}{2} = ₹\,\dfrac{11}{2}$

Rupees given by Pari's father $= ₹\,7\dfrac{1}{4} = ₹\,\dfrac{29}{4}$

Total amount Pari had now $= \dfrac{11}{2} + \dfrac{29}{4}$

LCM of 2 and 4 $= 4$

$$= \dfrac{11 \times 2 + 29 \times 1}{4} = \dfrac{22 + 29}{4}$$

$$= ₹\,\dfrac{51}{4} = ₹\,\mathbf{12\dfrac{3}{4}}$$

Pari have total of $₹\,12\dfrac{3}{4}$.

5. Time spent in watching TV $= 2\dfrac{5}{6}\ \text{hr} = \dfrac{17}{6}\ \text{hr}$

Time spent in playing cricket $= 1\dfrac{5}{12}\ \text{hr} = \dfrac{17}{12}\ \text{hr}$

Total time spent in enjoying both $= \dfrac{17}{6} + \dfrac{17}{12}$

LCM of 6 and 12 = 12

$$= \frac{17 \times 2 + 17 \times 1}{12} = \frac{34 + 17}{12}$$

$$= \frac{51}{12} \text{ hr} = \mathbf{4 \frac{1}{4} \text{ hr}}$$

Vishal spent total time of $4 \frac{1}{4}$ hours.

6. Length of red ribbon bought $= 1 \frac{3}{8}$ m $= \frac{11}{8}$ m

Length of yellow ribbon bought $= 2 \frac{1}{4}$ m $= \frac{9}{4}$ m

Total ribbon Anjali bought $= \frac{11}{8} + \frac{9}{4}$

LCM of 8, 4 = 8

$$= \frac{11 \times 1 + 9 \times 2}{8} = \frac{11 + 18}{8} = \frac{29}{8} \text{ m} = \mathbf{3 \frac{5}{8} \text{ m}}$$

Total length of ribbon bought by Anjali is $3 \frac{5}{8}$ m.

7. Length of cloth used in *Kurta* $= 1 \frac{9}{10}$ m $= \frac{19}{10}$ m

Length of cloth used in *salwar* $= 2 \frac{1}{5}$ m $= \frac{11}{5}$ m

Total cloth used in suit $= \frac{19}{10} + \frac{11}{5}$

LCM of 10, 5 = 10

$$= \frac{19 \times 1 + 11 \times 2}{10} = \frac{19 + 22}{10}$$

$$= \frac{41}{10} \text{ m} = \mathbf{4 \frac{1}{10} \text{ m}}$$

Total length of cloth used in Priyanka's suit is $4 \frac{1}{10}$ m.

8. In first jump frog leaped $= \frac{2}{3}$ m

In second jump $= \frac{3}{4}$ m

In third jump $= \frac{4}{5}$ m

Total distance leaped by frog $= \frac{2}{3} + \frac{3}{4} + \frac{4}{5}$

LCM of 3, 4, 5 = 60

$$= \frac{2 \times 20 + 3 \times 15 + 4 \times 12}{60}$$

$$= \frac{40 + 45 + 48}{60} = \frac{133}{60} \, m = \mathbf{2\frac{13}{60}} \, \mathbf{m}$$

Thus, frog leaped total distance of $2\frac{13}{60}$ m.

9. Amount of grapes bought $= 1\frac{1}{2}$ kg $= \frac{3}{2}$ kg

Amount of apples bought $= 1\frac{1}{8}$ kg $= \frac{9}{8}$ kg

Amount of dates bought $= \frac{3}{4}$ kg

Total amount of fruits bought by Ajay $= \frac{3}{2} + \frac{9}{8} + \frac{3}{4}$

LCM of 2, 8, 4 $= 8$

$$= \frac{3 \times 4 + 9 \times 1 + 3 \times 2}{8}$$

$$= \frac{12 + 9 + 6}{8} = \frac{27}{8} \, \text{kg} = \mathbf{3\frac{3}{8}} \, \mathbf{kg}$$

Ajay bought total of $3\frac{3}{8}$ kg of fruits.

10. Mass of canister $= 1\frac{1}{8}$ kg $= \frac{9}{8}$ kg

Mass of oil $= 14\frac{3}{4}$ kg $= \frac{59}{4}$ kg

Total mass of canister with oil $= \frac{9}{8} + \frac{59}{4}$

LCM of 8 and 4 $= 8$

$$= \frac{9 \times 1 + 59 \times 2}{8} = \frac{9 + 118}{8}$$

$$= \frac{127}{8} \, \text{kg} = \mathbf{15\frac{7}{8}} \, \mathbf{kg}$$

Total mass of the canister with oil is $15\frac{7}{8}$ kg.

11. Quantity of chocolate eaten by Jai on his way to school $= 1\frac{1}{3}$ bars

$$= \frac{4}{3} \, \text{bars}$$

On his way back Jai ate $= 2\frac{1}{4}$ bars $= \frac{9}{4}$ bars

$$\text{Total chocolate eaten by him} = \frac{4}{3} + \frac{9}{4}$$

$$\text{LCM of 3 and 4} = 12$$

$$= \frac{4 \times 4 + 9 \times 3}{12} = \frac{16 + 27}{12}$$

$$= \frac{43}{12} = 3\frac{7}{12}$$

Thus, Jai ate total of $3\frac{7}{12}$ bars.

Exercise 11.4

1. $\dfrac{7}{31}$ **2.** $\dfrac{11}{25}$ **3.** $\dfrac{4}{15}$ **4.** $\dfrac{2}{5}$ **5.** $\dfrac{2}{7}$

6. $\dfrac{4}{11}$ **7.** $\dfrac{4}{7}$ **8.** $\dfrac{3}{8}$ **9.** $\dfrac{2}{9}$ **10.** $\dfrac{1}{18}$

11. $\dfrac{5}{16}$ **12.** $\dfrac{5}{12}$ **13.** $\dfrac{1}{10}$ **14.** $\dfrac{1}{12}$ **15.** $\dfrac{1}{20}$

16. $\dfrac{1}{56}$ **17.** $\dfrac{11}{48}$ **18.** $\dfrac{1}{20}$ **19.** $\dfrac{1}{24}$ **20.** $\dfrac{1}{30}$

21. $\dfrac{11}{24}$ **22.** $\dfrac{1}{6}$ **23.** $\dfrac{1}{4}$ **24.** $\dfrac{1}{15}$

Exercise 11.5

1. $3\dfrac{2}{9}$ **2.** $2\dfrac{1}{3}$ **3.** $6\dfrac{2}{11}$ **4.** $2\dfrac{1}{5}$ **5.** $\dfrac{1}{3}$

6. $7\dfrac{1}{4}$ **7.** $\dfrac{9}{10}$ **8.** $2\dfrac{1}{2}$ **9.** $1\dfrac{2}{9}$ **10.** $1\dfrac{1}{4}$

11. $\dfrac{1}{10}$ **12.** $1\dfrac{1}{6}$ **13.** $\dfrac{3}{4}$ **14.** $1\dfrac{3}{4}$ **15.** $\dfrac{7}{9}$

16. $\dfrac{11}{24}$ **17.** $2\dfrac{1}{2}$

Exercise 11.6

1. Length of Rani's jump $= 3\dfrac{1}{4}\,\text{m} = \dfrac{13}{4}\,\text{m}$

Length of Neha's jump $= 3\dfrac{2}{5}\,\text{m} = \dfrac{17}{5}\,\text{m}$

To compare both fraction, we first have to make their denominator same by taking their LCM.

$$\frac{13}{4}, \frac{17}{5}$$

LCM of 4 and 5 $= 20$

$$= \frac{13 \times 5,\ 17 \times 4}{20} = \frac{65 < 68}{20}$$

Clearly, $\dfrac{65}{20} < \dfrac{68}{20}$ or $\dfrac{13}{4}$ m $< \dfrac{17}{5}$ m

Thus, Neha jumped longer.

Now, length of jump which Neha jumped more than Rani

$$= \frac{17}{5} - \frac{13}{4}$$

$$= \frac{68 - 65}{20} \qquad \text{(solved above)}$$

$$= \frac{\mathbf{3}}{\mathbf{20}}\ \mathbf{m}$$

Thus, Neha jumped $\dfrac{3}{20}$ m more than Rani.

2. Amount of gas in cylinder $= 14$ kg

Amount of gas used $= 9\dfrac{3}{5}$ kg $= \dfrac{48}{5}$ kg

Amount of gas left in cylinder $= \dfrac{14}{1} - \dfrac{48}{5}$

LCM of 1 and 5 $= 5$

$$= \frac{14 \times 5 - 48 \times 1}{5} = \frac{70 - 48}{5}$$

$$= \frac{22}{5} = \mathbf{4\dfrac{2}{5}}\ \mathbf{kg}$$

Amount of gas left in cylinder is $4\dfrac{2}{5}$ kg.

3. Time taken by Roma to complete race $= 18\dfrac{6}{10}$ sec $= \dfrac{186}{10}$ sec

Time taken by Mona to complete race $= 16\dfrac{3}{10}$ sec $= \dfrac{163}{10}$ sec

More time which Roma take as compared to Mona $= \dfrac{186}{10} - \dfrac{163}{10}$

LCM of 10, 10 $= 10$

$$= \frac{186 - 163}{10} = \frac{23}{10} = \mathbf{2\dfrac{3}{10}}\ \mathbf{sec}$$

Thus, Roma take $2\dfrac{3}{10}$ sec more.

4. Milk bought in the morning $= 4$ litre

Milk used during the day $= 2\dfrac{3}{4}$ litre $= \dfrac{11}{4}$ litre

$\left(\,34\,\right)$

Milk left $= \dfrac{4}{1} - \dfrac{11}{4}$

LCM of 1 and 4 = 4

$$= \dfrac{4 \times 4 - 11 \times 1}{4} = \dfrac{16 - 11}{4} = \dfrac{5}{4} \text{ litre} = \mathbf{1\dfrac{1}{4}} \textbf{ litre}$$

Thus, $1\dfrac{1}{4}$ litre of milk was left with Sania.

5. Milk drank in February $= 17\dfrac{7}{10}$ litre $= \dfrac{177}{10}$ litre

Milk drank in March $= 18\dfrac{3}{10}$ litre $= \dfrac{183}{10}$ litre

Clearly, Riya drank more milk in March (as $183 > 177$ and denominator is same)

More milk that Riya drank in March $= \dfrac{183}{10} - \dfrac{177}{10} = \dfrac{183 - 177}{10}$

$$= \dfrac{6}{10} = \mathbf{\dfrac{3}{5}} \textbf{ litre}$$

Riya drank $\dfrac{3}{5}$ litre milk more in March.

6. Distance that Pihu walked $= 2\dfrac{1}{2}$ km $= \dfrac{5}{2}$ km

Distance that Rakhi walked $= 1\dfrac{7}{10}$ km $= \dfrac{17}{10}$ km

To compare both fraction, we first have to make the denominator same by taking their LCM.

$$\dfrac{5}{2}, \dfrac{17}{10}$$

LCM of 2 and 10 = 10

$$= \dfrac{5 \times 5, \ 17 \times 1}{10} = \dfrac{25 > 17}{10}$$

$$= \dfrac{5}{2} > \dfrac{17}{10}$$

Thus, Pihu walked more than Rakhi.

Distance which Pihu walked more than Rakhi $= \dfrac{5}{2} - \dfrac{17}{10}$

$$= \dfrac{25 - 17}{10} \qquad \text{(Solved above)}$$

$$= \dfrac{8}{10} \text{ km} = \mathbf{\dfrac{4}{5}} \textbf{ km}$$

Thus, Pihu walked $\dfrac{4}{5}$ km more than Rakhi.

7. Quantity of water in a bucket $= 10\dfrac{2}{5}$ litre $= \dfrac{52}{5}$ litre

Quantity of water taken by Vardan $= 1\dfrac{3}{4}$ litre $= \dfrac{7}{4}$ litre

Quantity of water left in a bucket $= \dfrac{52}{5} - \dfrac{7}{4}$

LCM of 5 and 4 $= 20$

$$= \dfrac{52 \times 4 - 7 \times 5}{20} = \dfrac{208 - 35}{20} = \dfrac{173}{20} = \mathbf{8\,\dfrac{13}{20}}\ \textbf{litre}$$

Thus, $8\dfrac{13}{20}$ litre of water is left in the bucket.

8. Time taken on bicycle $= 1\dfrac{1}{2}$ hr $= \dfrac{3}{2}$ hr

Time taken on scooter $= \dfrac{2}{3}$ hr

To compare both fractions we first have to make same denominator by taking LCM.

$$\dfrac{3}{2}, \ \dfrac{2}{3}$$

LCM of 2 and 3 $= 6$

$$= \dfrac{3 \times 3,\ 2 \times 2}{6} = \dfrac{9 > 4}{6}$$

Clearly, $\qquad \dfrac{9}{6} > \dfrac{4}{6} \qquad$ or $\qquad \dfrac{3}{2} > \dfrac{2}{3}$

More time taken on bicycle than on scooter $= \dfrac{3}{2} - \dfrac{2}{3}$

$$= \dfrac{9 - 4}{6} \qquad \text{(Solved above)}$$

$$= \mathbf{\dfrac{5}{6}}\ \textbf{hr}$$

It take $\dfrac{5}{6}$ hr more on bicycle than on scooter.

9. Amount of milk bought by mary $= 2\dfrac{1}{2}$ litre $= \dfrac{5}{2}$ litre

Amount of milk used in the morning $= \dfrac{3}{4}$ litre

Amount of milk used in the evening $= 1\dfrac{1}{5}$ litre $= \dfrac{6}{5}$ litre

Amount of milk left in the evening $= \dfrac{5}{2} - \left(\dfrac{3}{4} + \dfrac{6}{5}\right)$

LCM of 2, 4 and 5 = 20

$$= \frac{5 \times 10 - (3 \times 5 + 6 \times 4)}{20}$$

$$= \frac{50 - (15 + 24)}{20} = \frac{\mathbf{11}}{\mathbf{20}} \text{ litre}$$

In the evening $\frac{11}{10}$ L of milk was left.

10. Fraction of students having curly hair $= \frac{1}{9}$

Now, complete fraction is always 1.

Thus, fraction of students who do not have curly hair $= 1 - \frac{1}{9}$

$$\text{LCM} = 9$$

$$= \frac{1 \times 9 - 1 \times 1}{9} = \frac{9 - 1}{9} = \frac{\mathbf{8}}{\mathbf{9}}$$

Thus, $\frac{8}{9}$ of students do not have curly hair.

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Unit-V : Money and Time

12.   Money

Exercise 12.1

1. 1800	**2.** 1500	**3.** 35
4. 10750	**5.** 22358	**6.** 52486
7. 35.25	**8.** 89.90	**9.** 43.90
10. 759; 65	**11.** 169; 30	**12.** 129; 70

Exercise 12.2

1. ₹ 103	**2.** ₹ 368	**3.** ₹ 67.71
4. ₹ 781.62	**5.** ₹ 740.25	**6.** ₹ 771.65
7. ₹ 782.26	**8.** ₹ 44	**9.** ₹ 100
10. ₹ 1850	**11.** ₹ 2825	**12.** ₹ 89.25.
13. ₹ 345.50	**14.** ₹ 654.72	**15.** ₹ 284.80

Exercise 12.3

1. 98	**2.** 4	**3.** ₹ 30.75
4. ₹ 10.10	**5.** ₹ 6.75	**6.** ₹ 15
7. ₹ 90.85, ₹ 9.15	**8.** ₹ 437.74, ₹ 62.26	

9. A chocolate bar costs = ₹ 15.25
   3 chocolate bars cost = ₹ 15.25 × 3 = ₹ 45.75
   Money will be returned = ₹ 100.00 − ₹ 45.75 = ₹ **54.25**
   So, ₹ 54.25 will be returned to Aman.
10. Cost of 5 metres of cloth = ₹ 235.20
    Cost of 1 metre of cloth = ₹ 235.20 ÷ 5 = ₹ **47.04**
    So, the cost of one metre cloth is ₹ 47.04.
11. 1 week = 7 days
    Gunjan spends in 7 newspapers = ₹ 16.80
    She spends in 1 newspaper = ₹ 16.80 ÷ 7 = ₹ **2.40**
    So, the cost of 1 newspaper is ₹ 2.40.
12. The cost of book = ₹ 197.75
    Deepak has money = ₹ 139.90
    Deepak needs more money = ₹ 197.75 − ₹ 139.00 = ₹ **58.75**
    So, Deepak needs money of ₹ 58.75.
13. Rahul spent on rides = ₹ 45.00
    Rahul spent on games = ₹ 137.00
    Rahul spent on food = ₹ 92.50
    Rahul spent total money = ₹ 45.00 + ₹ 137.00 + ₹ 92.50
    $\qquad\qquad\qquad$ = ₹ 274.50
    Rahul had with him = ₹ 300.00
    Money left with Rahul = ₹ 300.00 − ₹ 274.50 = ₹ **25.50**
14. Price of one pencil = ₹ 6
    How many pencils can be bought for ₹ 100 = ₹ 100.00 ÷ ₹ 6
    $\qquad\qquad\qquad\qquad\qquad\qquad$ = **16 pencils**
    16 pencils price = 16 × 6 = ₹ 96
    and money will be left = ₹ 100 − ₹ 96 = ₹ 4
    So, 16 pencils can be bought for ₹ 100 and ₹ 4 will be left over.
15. The cost of apples = ₹ 22.75
    The shopkeeper returned Reema = ₹ 27.25
    Reema had money = ₹ 22.75 + ₹ 27.25 = ₹ **50.00**

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13. Clock and Calendar

Exercise 13.1

1. quarter past twelve; 12 : 15
2. 20 minutes past 11; 11 : 20
3. 5 minutes past 7; 7 : 05
4. quarter to 4; 3 : 45
5. 10 minutes to 7; 6 : 50
6. 10 minutes past 5; 5 : 10

Exercise 13.2

1. 6 : 45	**2.** 12 : 30	**3.** 10 : 15
4. 4 : 15	**5.** 2 : 45	**6.** 4 : 28
7. 12 : 45	**8.** 1 : 45	**9.** 8 : 50
10. 7 : 50	**11.** 3 : 40	**12.** 12 : 33
13. 12 : 50	**14.** 9 : 53	**15.** 5 : 08
16. 3 : 04	**17.** quarter past five	

18. quarter to eight **19.** quarter past eight
20. half past nine **21.** 17 minutes past 5
22. 17 minutes to 4 **23.** 8 minutes to 9
24. 20 minutes to 2 **25.** 17 minutes to 9
26. half past six **27.** 8 minutes past 11
28. 5 minutes past 10 **29.** 4 : 55
30. 7 : 35 **31.** 8 : 00
32. 1 : 00 **33.** 6 : 05
34. 10 : 15 **35.** 20 minutes to 6
36. quarter to 4 **37.** 5 minutes to 8
38. 25 minutes to 5

Exercise 13.3

1. 10 : 05 pm	**2.** 12 : 30 am	**3.** 7 : 15 am
4. 8 : 15 pm	**5.** 1 : 20 pm	**6.** 3 : 45 am
7. 12 : 30 pm	**8.** 5 : 30 pm	**9.** 5 : 30 am
10. 11 : 45 pm	**11.** 10:15 am	**12.** 3 : 00 pm
13. 9 : 00 am	**14.** 9 : 00 pm	**15.** 11 : 10 pm
16. 10 : 30 am	**17.** 10 : 00 pm	**18.** 11 : 25 am
19. 1 : 30 pm	**20.** 4 : 00 pm	**21.** 8 : 30 am
22. 11 : 05 pm	**23.** 4 : 00 am	**24.** 6 : 05 am
25. 3 : 50 pm	**26.** 3 : 00 am 3	

27,28 and **29.** Do it yourself

Exercise 13.4

1. 1235 hours	**2.** 1200 hours	**3.** 2400 hours
4. 1820 hours	**5.** 1205 hours	**6.** 0030
7. 0315 hours	**8.** 2305 hours	**9.** 1100 hours
10. 12 mid-night	**11.** 12 : 10 am	**12.** 1 : 05 am
13. 5 : 20 am	**14.** 12 mid-night	**15.** 12 noon
16. 12 : 01 pm	**17.** 12 : 45 am	**18.** 7 : 08 pm
19. 9 : 15 pm	**20.** 1630 hours	

Exercise 13.5

1. 84 hours	**2.** 56 hours
3. 138 hours	**4.** 96 hours
5. 214 hours	**6.** 269 hours
7. 1 day 21 hours	**8.** 1 day 13 hours
9. 2 days 20 hours	**10.** 3 days 8 hours
11. 12 days 12 hours	**12.** 4 days 4 hours
13. 191 minutes	**14.** 135 minutes
15. 341 minutes	**16.** 546 minutes
17. 730 minutes	**18.** 617 minutes
19. 1 hour 40 minutes	**20.** 1 hour 15 minutes
21. 3 hours 7 minutes	**22.** 6 hours 36 minutes
23. 13 hours 20 minutes	**24.** 3 hours 27 minutes
25. 135 seconds	**26.** 180 seconds
27. 347 seconds	**28.** 490 seconds
29. 1505 seconds	**30.** 557 seconds
31. 1 minute 36 seconds	**32.** 1 minute 18 seconds
33. 1 minute 45 seconds	**34.** 3 minutes 20 seconds
35. 10 minutes 30 seconds	**36.** 9 minutes
37. 7800 seconds	**38.** 3900 seconds
39. 4260 seconds.	

Exercise 13.6

1. 5 h	**2.** 6 h 55 min	**3.** 12 h 20 min
4. 14 h 15 min	**5.** 32 h 40 min	**6.** 13 h 30 min
7. 1 h 29 min	**8.** 50 min	**9.** 3 h 47 min
10. 2 h 50 min	**11.** 12 h 30 min	**12.** 6 h 30 min

Exercise 13.7

1. Time of starting film show $= 3 : 25$ pm

Time for which it ran $= 2$ hours 40 min $= 2 : 40$

$$\boxed{1}$$

The time at which it end $= 3 : 25$

$$+\ 2 : 40$$

$$\overline{\ \mathbf{6 : 05}\ } \quad (\because 65 \min = 1 \text{ hour } 5 \min)$$

The film will end at 6 : 05 pm.

2. Time of leaving home $= 6 : 45$ am

Time taken to reach the school $= 40$ min

$$= 0 : 40 \min$$

$$\boxed{1}$$

Time at which she reaches school $= 6 : 45$

$$\begin{array}{r} + 0 : 40 \\ \hline \mathbf{7 : 25} \\ \hline \end{array}$$

$$(\because 85 \, \text{min} = 1 \, \text{hour} \, 25 \, \text{min})$$

Thus, Sania will reach school at 7 : 25 am.

3. Time of reaching the school $= 7 : 15 \, \text{am}$

Time after which Mona returned $= 6 \, \text{hours} \, 30 \, \text{min}$

Time of reaching home $= 7 : 15$

$$\begin{array}{r} + 6 : 30 \\ \hline 13 : 45 \\ \hline \end{array}$$

$$= 13 : 45 - 12 : 00 = \mathbf{1 : 45 \, pm}$$

Mona reached home at 1 : 45 pm.

4. Time of leaving Howrah station $= 09 : 40 \, \text{hours}$

Time after which train reached Kanpur $= 15 \, \text{hr} \, 30 \, \text{min} = 15 : 30$

$$\boxed{1}$$

Time of reaching Kanpur $= 09 : 40$

$$\begin{array}{r} + 15 : 30 \\ \hline 25 : 10 \\ \hline \end{array}$$

$$(40 \, \text{min} + 30 \, \text{min} = 70 \, \text{min} = 1 \, \text{hr} \, 10 \, \text{min})$$

$$= 25 : 10 - 24 : 00$$

$$= \mathbf{1 : 10 \, am} \text{ on the next day.}$$

The train will reach Kanpur 0110 hours or 1 : 10 am on the next day.

5. Time at which sun rose $= 5 : 58 \, \text{am}$

Time at which sun set $= 5 : 57 \, \text{pm}$

$$= 12 : 00 + 5 : 57 = 17 : 57$$

$$\boxed{6} \, \boxed{117}$$

Length of the day $= 17 : 57$

$$\begin{array}{r} - \quad 5 : 58 \\ \hline \mathbf{11 : 59} \\ \hline \end{array}$$

Length of the day is 11 hours 59 minutes.

6. Time at which match ended $= 4 : 15 \, \text{pm}$

Time for which match lasted $= 2 \, \text{hours} \, 30 \, \text{min} = 2 : 30$

$$\boxed{3} \, \boxed{75}$$

Time at which match started $= 4 : 15$

$$\begin{array}{r} - 2 : 30 \\ \hline \mathbf{1 : 45} \\ \hline \end{array}$$

Match started at 1 : 45 pm.

7. Time of leaving house = 8 : 45 am = 0845 hours
Time of returning = 6 : 15 pm = 1815 hours

$$\boxed{7}\ \boxed{75}$$

Time after which Riya returns = 18 : 15
$$-08 : 45$$
$$\overline{\mathbf{09 : 30}}$$

Riya return back home after 9 hours 30 minutes.

8. Time of starting first period = 7 : 45 am
Time of finishing first period = 8 : 25 am

$$\boxed{7}\ \boxed{85}$$

Time duration of first period = 8 : 25
$$-7 : 45$$
$$\overline{\mathbf{0 : 40}}$$

First period lasts for 40 minutes.

9. Time of leave from Bengaluru of an aeroplane = 0625 hours
Time of reaching Mumbai = 0910 hours

$$\boxed{8}\ \boxed{70}$$

Time taken to reach Mumbai = 09 : 10
$$-06 : 25$$
$$\overline{\mathbf{2 : 45}}$$

It takes 02 hours 45 minutes by an aeroplane to reach Mumbai.

10. Time at which Meenu wants cake = 1 pm = 1300 hours = 13 : 00
Time required for baking cake = 45 min = 0 : 45

$$\boxed{12}\ \boxed{60}$$

Time for which it should be kept in oven = 13 : 00
$$- 0 : 45$$
$$\overline{\mathbf{12 : 15}}$$

Cake should be kept at 12 : 15 pm in the oven.

Exercise 13.8

1. 7 months : January, March, May, July, August, October, December
2. 4 months : April, June, September, November
3. 365 days
4. One : February
5. 8th, 15th, 22nd, 29th
6. 52
7. (a) Friday   (b) Wednesday   (c) Thursday
     (d) Wednesday   (e) Thursday
8. (a) 9th   (b) 4th   (c) 31st

9. (a) Ist   (b) 22nd August   (c) 16th October
   (d) 29th December   (e) 18th December
10. 2004, 1996 2008.

Exercise 13.9

1. 50 months
2. 41 months
3. 66 months
4. 3 years 6 months
5. 1 year 6 months
6. 2 years 3 months
7. 17 years
8. 14 years 3 months
9. 3 years 4 months
10. 2 years 9 months
11. Number of days Mehul remain out in January $= 31 - 6 = 25$ days
    Number of days in February $= 28$ days
    Number of days in March $= 31$ days
    Number of days in April $= 7$ days
    Total number of days $= 25 + 28 + 31 + 7 =$ **91 days**
    Mehul remain out for 91 days.
12. Number of days school closed in May $= 31 - 15 = 16$ days
    Number of days school closed in June $= 30$ days
    Total number of days for which school remained closed
    $$= 16 + 30 = \textbf{46 days}$$
    School was closed for 46 days.
13. Joining date in factory $= 9$ Jan, 2016
    Worked for $= 25$ days
    $\therefore$ Number of days worked in January $= 31 - 8 = 23$ days
    Number of days worked in February $= 25 - 23 = 2$ days
    Thus, Rajiv left factory on **2nd February 2016.**
14. Number of days in April $= 30 - 19 = 11$ days
    Number of days in May $= 2$ days
    Total number of days $= 11 + 2 = $ **13 days**
    Examination continue for 13 days.
15. Duration of stay from 10 July, 2017 to 9 July, 2018 $= 1$ year
    Duration of stay from 10 July, 2018 to 9 November, 2018 $= 4$ months
    Duration of stay from 10 November, 2018 to 30 November, 2018 $= (30 - 9) = 21$ days
    Duration of stay from 1 December, 2018 to 5 December, 2018 $= 5$ days
    Total duration of stay at Central School
    $$= 1 \text{ year} + 4 \text{ months} + 21 \text{ days} + 5 \text{ days}$$
    $$= \textbf{1 year 4 months 26 days}$$

16. Number of days Renu remain out in 18 December, 2017
$= 31 - 17 = 14$ days
Number of days she remain out in January 2018 $= 3$ days
Number of total days she remain out $= 14 + 3 =$ **17 days**
Thus, Renu remain out for 17 days.

17. Duration of work 14 May, 2017 to 13 May, 2018 $= 1$ year
Duration of work 14 May, 2018 to 13 July, 2018 $= 2$ months
Duration of work 14 July, 2018 to 25 July, 2018 $= (25 - 13)$
$$= 12 \text{ days}$$
Total duration of work in the company $= 1$ year $+ 2$ months $+ 12$ days
$$= \textbf{1 year 2 months 12 days}$$

18. Number of days Roma worked in Feb, 2018 $= 28 - 10 = 18$ days
Total number of days she worked $= 48$ days
Days left $= 48 - 18 = 30$ days
$\therefore$ Number of days she worked in March $= 30$ days
$$= \textbf{30 March, 2018}$$
Thus, she left the factory on 30 March, 2018.

19. Number of days Nikki remain sick in 21 February, 2018
$$= 28 - 20 = 8 \text{ days}$$
Number of days in March he remain sick $= 1$ March, 2018
$$= 1 \text{ day}$$
Thus, he remain ill for $= 8 + 1 =$ **9 days**
Nikki remain ill for 9 days.

20. Number of days Annual sports lasted in October $= 31 - 26 = 5$ days
Number of days Annual sports lasted in November $= 8$ days
Number of total days for which Annual sports lasted $= 5 + 8$
$$= \textbf{13 days}$$
Annual sports lasted for 13 days.

❑

Unit-VI : Length, Weight and Capacity

14.   Length, Weight and Capacity

Exercise 14.1

1. 1000	**2.** 100	**3.** 10	**4.** 10
5. 100	**6.** 50	**7.** 10	**8.** 110
9. 300	**10.** 2000	**11.** 5500	**12.** 100 dam

13. 1000 m **14.** 1000 mm **15.** 100 dm **16.** 30 mm
17. 40 cm **18.** 90 m **19.** 10 hm

Exercise 14.2

Q.1 to 35 : Do it yourself.

36. Distance covered by car in a week = 2340 km 700 m
Distance covered by car in another week = 2870 km 500 m
Total distance covered by car = 2340 km 700 m
                              + 2870 km 500 m
                              5211 km 200 m

Thus, total distance covered by car is 5211 km 200 m.

37. Length of blue cloth = 350 m 50 cm
Length of red cloth = 450 m 70 cm
Length of green cloth = 505 m 10 cm
Total length of clothes = 350 m 50 cm
                            450 m 70 cm
                         + 505 m 10 cm
                         1306 m 30 cm

Thus, the total length of blue, red and green clothes that he has is 1306 m 30 cm.

38. Length of nylon cord = 1218 m 85 cm
Length of jute cord = 3243 m 75 cm
Total cord bought by Jai = 1218 m 85 cm
                         + 3243 m 75 cm
                         4462 m 60 cm

Thus, total length of cord bought by Jai is 4462 m 60 cm.

39. Length of red wire = 2312 m 50 cm
Length of black wire = 1676 m 50 cm
Length of yellow wire = 1870 m 75 cm
Total length of wire = 2312 m 60 cm
                         1676 m 50 cm
                      + 1870 m 75 cm
                      5859 m 75 cm

Thus, the shopkeeper has 5859 m 75 cm length of wire.

40. Distance covered by taxi in January = 4506 km 500 m
Distance covered by taxi in February = 5240 km 200 m
Distance covered by taxi in February than January
                         = 5240 km 200 m
                         − 4506 km 500 m
                         733 km 700 m

Thus, more distance covered by taxi in February than January is 733 km 700 m.

41. Distance of city 'A' from Delhi = 1045 km 700 m

Distance of city 'B' from Delhi = 847 km 900 m

Difference between both city 'A' and 'B' = 1045 km 700 m

$$\begin{array}{r} -\quad 847 \text{ km } 900 \text{ m} \\ \hline \mathbf{197 \text{ km } 800 \text{ m}} \end{array}$$

Thus, distance to city 'A' is more than city 'B' from Delhi is 197 km 800 m.

Exercise 14.3

1. 10 cg	**2.** 100 g	**3.** 1000 g . 100 cg
5. 50 g	**6.** 10 g	**7.** 110 g
8. 300 g	**9.** 2000 g	**10.** 5500 g
11. 30 g	**12.** 10 g	**13.** 100 dag
14. 100 g	**15.** 1000 mg	**16.** 100 dg
17. 30 mg	**18.** 40 cg	**19.** 90 g
20. 10 hg		

Exercise 14.4

1. 990 g 1 cg	**2.** 889 g 10 cg	**3.** 968 kg 6 g
4. 479 kg 995 g	**5.** 30 hg 30 g	**6.** 54 cg 6 mg
7. 33 g 62 cg	**8.** 55 g 91 cg	**9.** 3 kg 91 g
10. 122 kg 933 g		

11. Weight of potatoes = 1 kg 500 g

Weight of tomatoes = 1 kg 250 g

Total weight = 1 kg 500 g

$$\begin{array}{r} +\ 1 \text{ kg } 250 \text{ g} \\ \hline \mathbf{2 \text{ kg } 750 \text{ g}} \end{array}$$

Thus, total weight of potatoes and tomatoes bought by Sahil is 2 kg 750 g.

12. Weight of tea = 250 g

Weight of sugar = 500 g

Weight of biscuits = 200 g

Total weight = 250 g

$$\begin{array}{r} 500 \text{ g} \\ +\ 200 \text{ g} \\ \hline \mathbf{950 \text{ g}} \end{array}$$

Thus, total weight of tea, sugar and biscuits bought by Sita is 950 g.

13. Weight of cement in a truck = 7 mt 500 kg

Weight of cement in another truck = 9 mt 400 kg

Total weight of cement in both trucks

$$= 7 \text{ mt } 500 \text{ kg} + 9 \text{ mt } 400 \text{ kg}$$
$$= \textbf{16 mt 900 kg}$$

Total weight of cement carried both trucks is 16 mt 900 kg.

14. Weight of gold ornaments bought by Reshu = 12 g 3 dg

Weight of gold ornaments bought by her sister = 10 g 8 dg

Total weight = 12 g 3 dg

$$+ \underline{10 \ \text{ g} \ 8 \ \text{ dg}}$$
$$\textbf{23 g 1 dg}$$

Thus, total weight of gold ornaments bought by Reshu and her sister is 23 g 1 dg.

15. Total weight of the truck cement bags = 16 mt 500 kg

Weight of the empty truck = 5 mt 300 kg

Then, weight of the cement bags = 16 mt   500 kg

$$- \underline{\ \ 5 \ \text{ mt } \ 300 \ \text{ kg}}$$
$$\textbf{11 mt 200 kg}$$

Thus, weight of cement without truck is 11 mt 200 kg.

16. Amount of potatoes = 2 kg 500 g

Amount of used potatoes = 1 kg 700 g

Amount of potatoes left = 2 kg 500 g

$$- \underline{1 \ \text{ kg } \ 700 \ \text{ g}}$$
$$\textbf{0 kg 800 g}$$

Amount of potatoes left with Sania is 800 g.

Exercise 14.5

1. 10	**2.** 100	**3.** 1000	**4.** 100
5. 50 L	**6.** 10 L	**7.** 110 L	**8.** 300 L
9. 2000 L	**10.** 5500 L	**11.** 30 L	**12.** 10 L
13. 100 daL	**14.** 100 L	**15.** 1000 mL	**16.** 100 dL
17. 30 mL	**18.** 40 cL	**19.** 90 L	**20.** 10 hL

Exercise 14.6

1. 889 L 10 cL	**2.** 990 L 1 cL	**3.** 968 kL 6 L
4. 54 cL 6 mL	**5.** 32 L 62 cL	**6.** 1006 kL 897 L
7. 3 kL 91 L	**8.** 122 kL 933 L	

9. Quantity of petrol taken on Monday = 30 L 500 mL

Quantity of petrol taken on Sunday = 27 L 700 mL

Total quantity of petrol = 30 L 500 mL

$$+ \underline{27 \ \text{ L } \ 700 \ \text{ mL}}$$
$$\textbf{58 L 200 mL}$$

Thus, total quantity of petrol taken by my father is 58 L 200 mL.

10. Total quantity of milk = 700 L 500 mL
    Sold quantity of milk = 340 L 750 mL
    Left quantity of milk = 700 L 500 mL
    $\qquad\qquad\qquad\quad$ − 340 L 750 mL
    $\qquad\qquad\qquad$ **359 L 750 mL**
    Thus, total quantity of milk 359 L 750 mL is left.
11. Quantity of the milk dropped at one booth = 1250 L 500 mL
    Quantity of the milk dropped at another booth = 815 L 750 mL
    Total quantity of the milk dropped both booths = 1250 L 500 mL
    $\qquad\qquad\qquad\qquad\qquad\qquad$ + 815 L 750 mL
    $\qquad\qquad\qquad\qquad\qquad$ **2066 L 250 mL**
    Thus, total quantity of the milk dropped at both booths is 2066 L 250 mL.
12. Capacity of diesel in bus tank = 120 L 300 mL
    Quantity of diesel in bus tank already = 30 L 700 mL
    Quantity of diesel need to be filled in bus tank = 120 L 300 mL
    $\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ − 30 L 700 mL
    $\qquad\qquad\qquad\qquad\qquad\quad$ **89 L 600 mL**
    Thus, required quantity of diesel to be filled in bus tank is
    89 L 600 mL.
13. Quantity of the cold drink Sonia bought = 2 L 300 mL
    Quantity of the cold drink her sister bought = 5 L 200 mL
    Difference between quantity of cold drink to each one bought
    $\qquad\qquad\qquad\qquad\quad$ = 5 L 200 mL
    $\qquad\qquad\qquad\qquad\quad$ − 2 L 300 mL
    $\qquad\qquad\qquad\qquad\quad$ **2 L 900 mL**
    Thus, the difference between the cold drink to each one bought is
    2 L 900 mL. ❏

Unit-VII : Geometry

15. $\qquad\qquad$ Angle

Do it yourself.
$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad$ ❏

16. $\qquad\qquad$ Polygon

Do it yourself. $\qquad\qquad\qquad\qquad\qquad\qquad$ ❏

17.   Perimeter

1. Length of rectangle = 4.37 m
Breadth of rectangle = 2.19 m
Perimeter of rectangle = $2(l + b) = 2(4.37 + 2.19) =$ **13.12 m**

2. Sides of triangle = 5.3 cm, 7.9 cm, 4.7 cm
Perimeter of triangle = Sum of three sides
= 5.3 cm + 7.9 cm + 4.7 cm = **17.9 cm**

3. Perimeter of square = 84.8 cm
Perimeter of square = 4 × side
∴   Each side = $\dfrac{\text{Perimeter of square}}{4} = \dfrac{84.8}{4} =$ **21.2 cm**

4. Side of square = 1.243 km
Perimeter of square = 4 × side = 4 × 1.243 = **4.972 km**

5. In one round girl covers a distance equal to the perimeter of rectangle.
Perimeter of rectangle = $2(l + b)$
Given, $l = 120$ m, $b = 80$ m, perimeter = $2(120 + 80) = 2 \times 200$
= 400 m
In one round she covers = 400 m
Number of rounds to cover total of 1600 m = $\dfrac{1600}{400} =$ **4 rounds**

Girl will have to make 4 rounds.

6. Perimeter of an equilateral triangle = 3 × sides
Given perimeter = 20.4 m
Length of each side of a triangle = $\dfrac{20.4}{3} =$ **6.8 m**

7. Perimeter of square = 4 × side
Side of square = 125 m
Perimeter = 4 × 125 = 500 m
Cost of fencing 5 rounds = (500 × 5) × ₹ 2.10 = ₹ **5250**
Cost of fencing is ₹ 5250.

8. Total distance covered while walking on the boundary of triangular park
= perimeter of triangle
= 3 × side
= 3 × 30 = 90 m
= 90 × 100 = 9000 cm   (∵ 1 m = 100 cm)

Now in each step girl covers = 60 cm

$$\text{Total steps taken} = \frac{9000}{60} = \textbf{150 steps}$$

150 steps are taken by girl to make one round of the park.

9. Sides of triangular park = 210 m, 190 m and 150 m

   Perimeter of triangle = Sum of three sides

   $$= 210\,\text{m} + 190\,\text{m} + 150\,\text{m} = \textbf{550 m}$$

   Cost of fencing = 550 × ₹ 1.50 = ₹ **825**

   Total cost of fencing is ₹ 825.

10. Length of rectangular field = 320 m

    Breadth of rectangular field = 210 m

    Perimeter of rectangle = 2 (l + b)

    $$= 2\,(320 + 210) = 1060\,\text{m}$$

    Distance covered in 3 rounds = 3 × 1060 = **3180 m**

    Boy covers 3180 m in 3 rounds.

11. Perimeter of a triangle = 53 cm

    Two sides of a triangle = 16 cm and 18 cm

    Length of third side of a triangle = 53 cm − (16 + 18) cm = **19 cm**

    Length of third side of a triangle is 19 cm.

12. Length of a carpet = 5 m 20 cm = 5.20 m

    Breadth of a carpet = 3 m 20 cm = 3.20 m

    Perimeter of a carpet = 2 (5.20 + 3.20) = **16.8 m**

    Cost of tape = 16.8 × ₹ 2 = ₹ **33.60**

    The cost of tape is ₹ 33.60.

13. Length of garden = 50.5 m

    Breadth of garden = 31 m

    Perimeter of garden = 2 (l + b)

    $$= 2\,(50.5 + 31) = 163\,\text{m}$$

    Length of boundary reduced, leaving 1.5 m each on two sides

    $$= 2 \times 1.5\,\text{m} = 3\,\text{m}$$

    ∴ Length of the boundary = 163 − 3 = **160 m**

    Thus, total length of the boundary is 160 m.

14. Mona covers 100 m while going one round in which she covers the perimeter of rectangle

    Length of field = 28 m

    Perimeter of rectangle = 2 (l + b)

    $$100 = 2\,(28 + b)$$

    $$28 + b = \frac{100}{2} \quad \Rightarrow \quad 28 + b = 50$$

    The width of the field b = 50 − 28 = **22 m**

15. Length of square field = 250 m
Distance run by Shalu (Perimeter) = 4 × side
$$= 4 \times 250\,m = 1000\,m$$
In three rounds distance covered = 3 × 1000 = 3000 m
Length of rectangular field = 350 m
Breadth of rectangular field = 170 m
Distance run by Meenu (Perimeter) = 2 (*l* + *b*) = 2 (350 + 170)
$$= 2 \times 520 = 1040\,m$$
Distance covered in 3 rounds = 3 × 1040 = 3120 m
Difference in their distances = 3120 − 3000 = **120 m**   ❏

Unit-VIII : Pattern

18. Play with Patterns

Do it yourself.   ❏

Unit-IX : Data Handling

19. Data Handling

Exercise 19.1

1.

Bar Graph

2.

Bar Graph

3.

Bar Graph
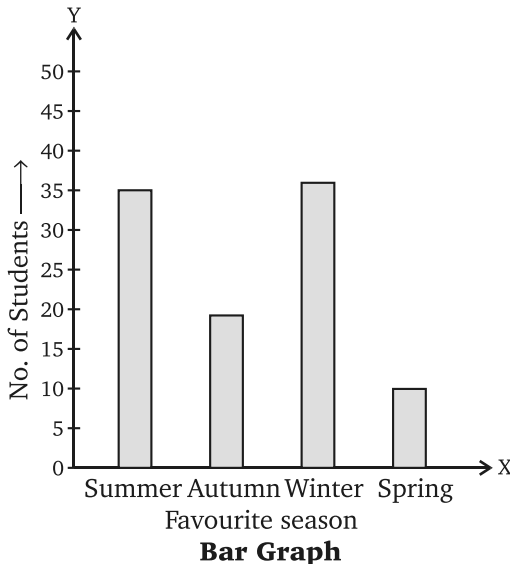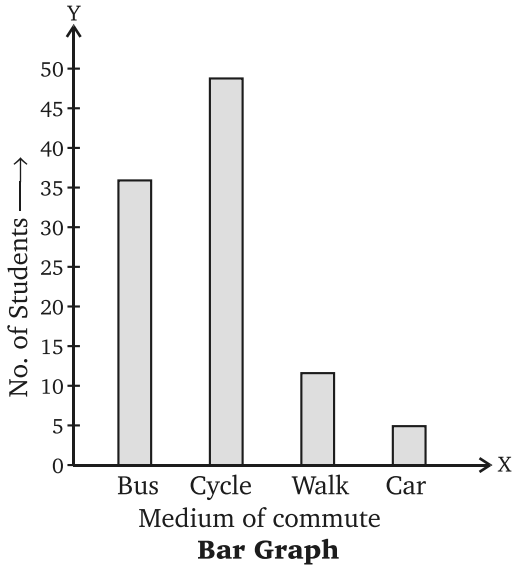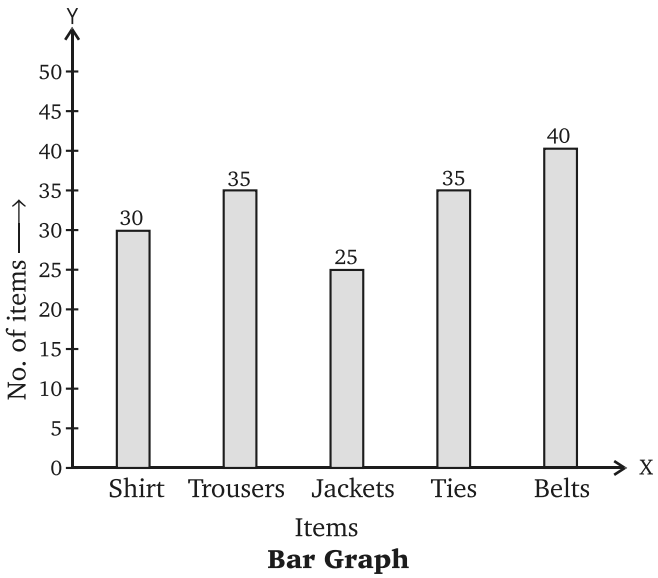
4.

Shubham	
Neetu	
Agrim	
Sheweta	

Pictograph

Exercise 19.2

1. (a) Kartik; (b) Ajay; (c) ₹ 40;
   (d) ₹ 20; (e) Rohit and Parul
2. (a) Sunita; (b) Kavita; (c) four;
   (d) One; (e) 4 marks
3. (i) (c); (ii) (b); (iii) (a) 27, (b) 9.
4. (a) July; (b) Nov; (c) 2 months;
   (d) 2cm; (c) 9 cm

❏

Half Yearly Model Test Paper

1. (a) 18,959 (b) 4,05,299
2. (a) $34519 = 30,000 + 4,000 + 500 + 10 + 9$
   (b) $1,00,000 + 4000 + 600 + 90 + 5$
3. Smallest possible number = 1,02,357
   Largest possible number = 7,53,210
4. (a) 8,80,107; eight lakh eighty thousand one hundred seven
   (b) 8,19,909; eight lakh nineteen thousand nine hundred nine.
6. $1,09,819 + 3,59,590 + 87,987 = 5,57,396$
7. 97,021
8. (a) $5870 \times 9 = 52830$ (b) Do it yourself.

$$\begin{array}{r} 5870 \\ \times\ 9 \\ \hline 52830 \end{array}$$

    (c) Do it yourself.

9. Total amount of donation = ₹ 1125 × 255 = ₹ 286875

10. (a) 1419 R 2   (b) 139 R 11   (c) 467

11. Required boxes for 2304 apples = 2304 ÷ 48 = 48

12. With 15 L of petrol car runs = 285 km

With 1 L of petrol car runs = 285 ÷ 15 = 19 km

With 10 L of petrol car runs = 19 × 10 = **190 km**

With 10 L of petrol car runs 190 km.

13. In 3 hours train travels = 219 km

In 1 hour train travels = 219 ÷ 3 = 73 km

In 8 hours train travels = 73 × 8 = **584 km**

Train travels 584 km in 8 hours.

14. (a) 12

     Multiplication factors of 12 are :

     1 × 12 = 12,   2 × 6 = 12,   3 × 4 = 12,

     All the factors of 12 are : 1, 2, 3, 4, 6, 12

     Hence, 2 and 3 are a prime numbers.

(b), (c), (d) Do it yourself.

15. (a) no   (b) yes   (c) no   (d) yes   (e) yes

16. 4

17. (a) 24

     24 = 2 × 2 × 2 × 3

```
2 | 24
2 | 12
2 | 6
3 | 3
  | 1
```

(b), (c), (d), (e) Do it yourself.

18. (a) All factors of 12 = 1, 2, 3, 4, 6, 12

     All factors of 18 = 1, 2, 3, 6, 9, 18

     Hence, highest common factors of 12 and 18 = 6

(b), (c), (d) Do it yourself.

19. (a) 16, 20

     All common prime factors of 16 and 20 = 2 × 2 = 4

     HCF of 16 and 20 = 4

```
2 | 16, 20
2 | 8, 10
  | 4, 5
```

(b), (c), (d) Do it yourself.

20. The number of marbles in each group, that is, it divides 40, 32 and 24 exactly. Hence, it is the HCF of 40, 32 and 24.

All common prime factors of 40, 32 and 24 $= 2 \times 2 \times 2$

$$
\begin{array}{r|l}
2 & 40,\ 32,\ 24 \\ \hline
2 & 20,\ 16,\ 12 \\ \hline
2 & 10,\ 8,\ 6 \\ \hline
 & 5,\ 4,\ 3
\end{array}
$$

HCF of the given number $= 2 \times 2 \times 2 = 8$

Thus, greatest number of marbles in each group $= 8$.

21. (a) 48　　(b) 42　　(c) 78　　(d) 216

22. Minimum time after which all the bells ring together is LCM of 30 and 40 minutes.

30 and 40 $= 2 \times 2 \times 2 \times 3 \times 5 = 120$ minutes $= 2$ hr.

$$
\begin{array}{r|l}
2 & 30,\ 40 \\ \hline
2 & 15,\ 20 \\ \hline
2 & 15,\ 10 \\ \hline
3 & 15,\ 5 \\ \hline
5 & 5,\ 5 \\ \hline
 & 1,\ 1
\end{array}
$$

The bells will ring again together after 2 hr of 7 : 30 am. or they will ring again at 9 : 30 am.

23. (a) $2\dfrac{3}{5}$　　(b) $5\dfrac{6}{7}$　　(c) $1\dfrac{7}{9}$　　(d) $3\dfrac{2}{5}$　　(e) $3\dfrac{5}{18}$

24. (a) $\dfrac{3}{5} < \dfrac{5}{7}$　　(b) $\dfrac{1}{2} < \dfrac{3}{4}$　　(c) $\dfrac{11}{12} > \dfrac{4}{5}$

25. (a) <　　(b) <　　(c) >

26. (a) $1\dfrac{3}{4} + 3\dfrac{1}{2} + 5\dfrac{1}{8} = (1 + 3 + 5) + \left(\dfrac{3}{4} + \dfrac{1}{2} + \dfrac{1}{8} \right)$

$$
= 9 + \left(\frac{3 \times 2 + 1 \times 4 + 1 \times 1}{8} \right)
$$

$$
= 9 + \left(\frac{6 + 4 + 1}{8} \right) = 9 + \frac{11}{8}
$$

$$
= 9 + 1\frac{3}{8} = 10\frac{3}{8}
$$

(b), (c) Do it yourself.

27. Quantity of chocolate eaten by Lalit on his way to school $= 1\dfrac{1}{3}$ bars

$$= \dfrac{4}{3} \text{ bars}$$

On his way back Lalit ate $= 2\dfrac{1}{4}$ bars $= \dfrac{9}{4}$ bars

Total chocolate eaten by him $= \dfrac{4}{3} + \dfrac{9}{4}$

LCM of 3 and 4 $= 12$

$$= \dfrac{4 \times 4 + 9 \times 3}{12} = \dfrac{16 + 27}{12}$$

$$= \dfrac{43}{12} = \mathbf{3\dfrac{7}{12}}$$

Thus, Jai ate total of $3\dfrac{7}{12}$ bars.

❏

Annual Model Test Paper

1. Do it yourself.
2. Do it yourself.
3. Do it yourself.
4. (a) 45 hours
   We divide 45 hours by 24 hours to convert into days.
   45 hours = 1 day 21 hours

   24) 45 (1 ← day
        24
       21 ← hours

   (b), (c), (d), (e), (f) Do it yourself.
5. (a) h   min
      1̄
     3   27
   + 1   33
     5   00

   (b), (c) Do it yourself.
6. Do it yourself.
7. (a) Do it yourself.
8. Time taken to paint the table $= \dfrac{3}{4}$ hr

$$\text{Time taken to paint the chair} = \frac{1}{3}\text{ hr}$$

$$\text{Total time taken} = \frac{3}{4} + \frac{1}{3}$$

$$\text{LCM of 4 and 3} = 12$$

$$= \frac{3 \times 3 + 1 \times 4}{12} = \frac{9 + 4}{12} = \frac{13}{12} = \mathbf{1\frac{1}{12}}$$

Ravi took of $1\frac{1}{12}$ hours in all.

9. Amount of money Roma had $= ₹\, 2\frac{1}{20} = ₹\, \frac{41}{20}$

Amount of money given by her sister $= ₹\, 1\frac{1}{5} = ₹\, \frac{6}{5}$

Total money she had now $= \frac{41}{20} + \frac{6}{5}$

LCM of 20 and 5 $= 20$

$$= \frac{41 \times 1 + 6 \times 4}{20} = \frac{41 + 24}{20} = \frac{65}{20} = \frac{13}{4} = \mathbf{3\frac{1}{4}}$$

Roma had total of $₹\, 3\frac{1}{4}$.

10. A chocolate bar costs $= ₹\, 15.25$
3 chocolate bars cost $= ₹\, 15.25 \times 3 = ₹\, 45.75$
Money will be returned $= ₹\, 100.00 - ₹\, 45.75 = ₹\, \mathbf{54.25}$
So, $₹\, 54.25$ will be returned to Aman.

11. Cost of 1 metre of cloth $= \dfrac{₹\, 235.20}{5} = ₹\, 47.04$

12. Distance covered by car in a week $= 2340\,\text{km } 700\text{ m}$
Distance covered by car in another week $= 2870\,\text{km } 500\text{ m}$
Total distance covered by car $= 2340\ \ \text{km}\ \ \ 700\ \ \text{m}$
$$+\ 2870\ \ \text{km}\ \ \ 500\ \ \text{m}$$
$$\mathbf{5211\ km\ 200\ m}$$

Thus, total distance covered by car is 5211 km 200 m.

13. Do it yourself.   **14.** Do it yourself.

15. Do it yourself.

16. Time of reaching the school $= 7 : 15$ am
Time after which Priyanka returned $= 6$ hours 30 min
Time of reaching home $= 7 : 15$
$$+\ 6 : 30$$
$$13 : 45$$
$$= 13 : 45 - 12 : 00 = \mathbf{1 : 45\,pm}$$
Priyanka reached home at $1 : 45$ pm.

17. Time of leave from Bengaluru of an aeroplane = 0625 hours
Time of reaching Mumbai = 0910 hours

$$\begin{aligned}
\text{Time taken to reach Mumbai} &= \overset{8}{}\overset{\boxed{70}}{09} : 10 \\
&\ - 06 : 25 \\
\hline
&\ \mathbf{2 : 45}
\end{aligned}$$

It takes 02 hours 45 minutes by an aeroplane to reach Mumbai.

18. Number of days closed in May = $31 - 20 = 11$ days
Number of days closed in June = 30 days
Number of days closed in July = 7 days
Total number of days school remain closed
$$= 11 + 30 + 7 = 48 \text{ days}$$

19. Do it yourself.

20. Do it yourself.

21. Do it yourself.

22. Length of a carpet = 5 m 20 cm = 5.20 m
Breadth of a carpet = 3 m 20 cm = 3.20 m
Perimeter of a carpet = $2\,(5.20 + 3.20) = \mathbf{16.8\ m}$
Cost of tape = $16.8 \times ₹\,2 = ₹\ \mathbf{33.60}$
The cost of tape is ₹ 33.60.

❑