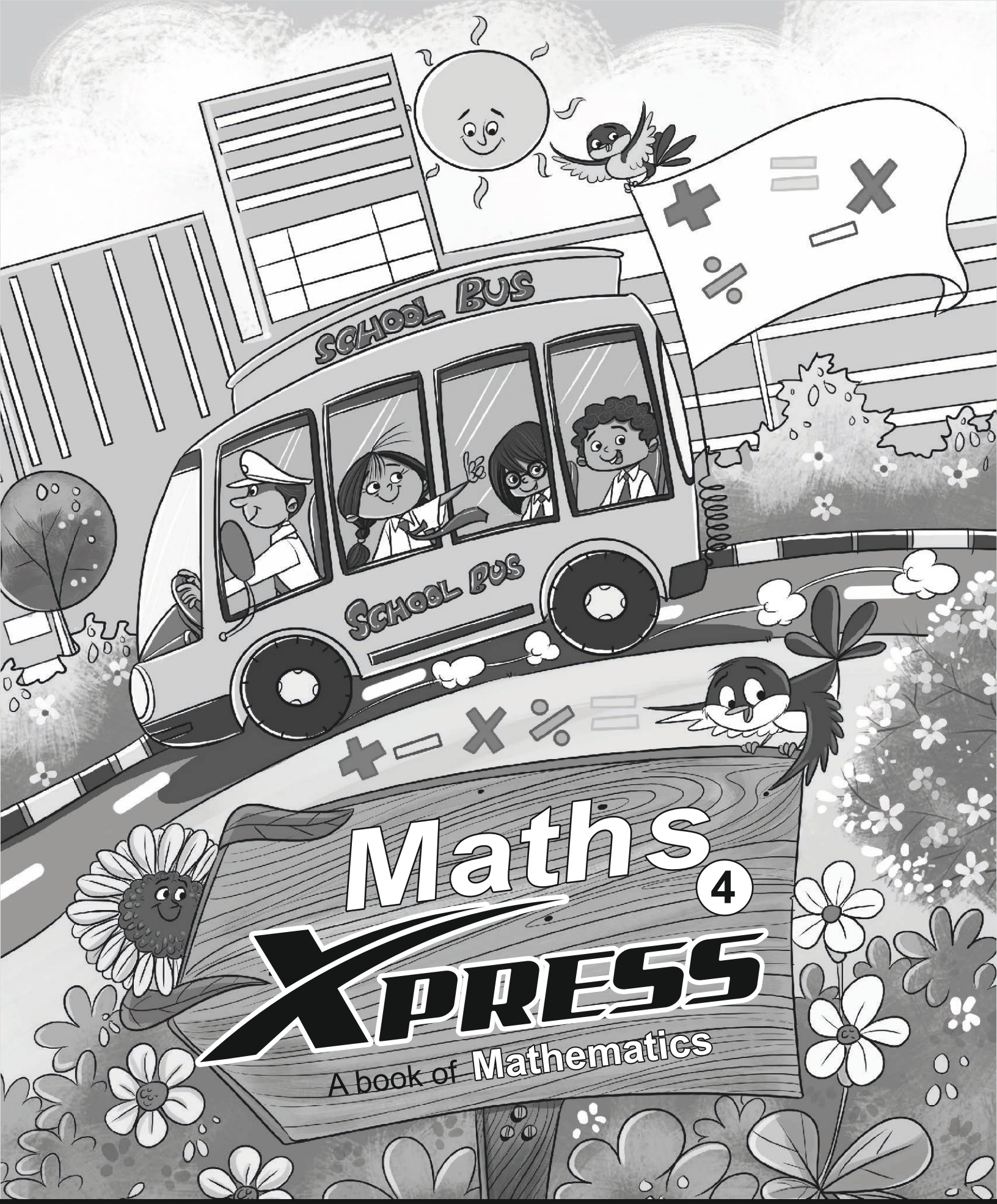

Maths 4

XPRESS

A book of Mathematics

1. Numbers

1. (a) Six thousand two hundred seventy
(b) Five thousand four hundred ninety three
(c) Nine thousand eight hundred
(d) Five thousand twenty
(e) Six thousand three
(f) Six thousand thirty
(g) Eight thousand thirteen

2. (a) 2604 (b) 7300 (c) 8080 (d) 5074
(e) 8017 (f) 6890

3. Place value of each digit in 72094
Place value of 7 = 70000 Face value of 7 = 7
Place value of 2 = 2000 Face value of 2 = 2
Place value of 0 = 0 Face value of 0 = 0
Place value of 9 = 90 Face value of 9 = 9
Place value of 4 = 4 Face value of 4 = 4

4. Place values of two sixes = 6000 and 60

Difference = 6000
− 60
5940

5. Place value of 8 = 8000, place value of 5 = 500

Difference = 8000
− 500
7500

6. (a) 7 thousand + 2 hundred + 4 tens + 3 ones
(b) 3 thousand + 2 hundred + 7 tens + 0 ones
(c) 9 thousand + 0 hundred + 3 tens + 9 ones
(d) 4 thousand + 0 hundred + 0 tens + 3 ones
(e) 4 thousand + 0 hundred + 3 tens + 0 ones
(f) 4 thousand + 3 hundred + 0 tens + 0 ones

7. (a) 687 < 896 < 897 < 967 < 968 < 978
(b) 700 < 707 < 717 < 770 < 777
(c) 504 < 509 < 516 < 517 < 542 < 548

8. (a) 430 < 400 < 350 < 340 < 300
(b) 62 < 60 < 26 < 20 < 6 < 2.

9. (a) 12568 (b) 20567.

10. (a) 987320 (b) 876540

11. Placed value of 5 = 50000
Face value of 5 = − 5
Difference = 49995

12. Place value of 4 = 4000
Place value of 6 = − 60
Difference = 3940

13. Place value of 2 in 32,85,000 = 200000
Place value of 2 in 52,36,447 = − 200000
Difference 0

14. (a) 580 (b) 331 (c) 910 (d) 5285
(e) 8300 (f) 6010

15. (a) 799 (b) 729 (c) 4719 (d) 320699
(e) 32699 (f) 5289

16. (a) 101 (b) 1000

17. (a) 20348

18. (a) 558 (b) 606 (c) 1477 (d) 6068

19. (a) 875 (b) 320 (c) 953

❑

2. Roman Numerals

1. a – iv, b – iii, c – v, d – ii, e – i

2. (a) I (b) II (c) III (d) VI
(e) VIII (f) XIII (g) XV (h) XX
(i) XXVII

3. (a) 4 (b) 7 (c) 9 (d) 12
(e) 16 (f) 18

4. (a) Roman number (b) V, L and D (c) I X C and M

5. (a) II (b) IX (c) I (d) XVIII

6. (a) < (b) > (c) < (d) =

7. (a) 40 + 4 = XLIV (b) 30 + 8 = XXXVIII
(c) 90 + 5 = XCV (d) 60 + 9 = LXIX
(e) 80 + 7 = LXXXVII (f) 90 + 2 = XCII
(g) 60 + 6 = LXVI (h) LIV

8. (a) 10 + 10 + 9 = 29 (b) (50 – 10) + 5 = 45
(c) 50 + 10 + 10 + 10 + 9 = 89 (d) (100 – 10) + 9 = 99
(e) (50 – 10) + 9 = 49 (f) 50 + 10 + 10 + 8 = 78
(g) (100 – 10) + 4 = 94 (h) 50 + 5 = 55
(i) 10 + 10 + 10 + 9 = 39 (j) 50 + 10 + 4 = 64

9. (a) VL, (b) IVC (c) IXX (d) IC

10. (a) $50 + 10 + 2 = 62$

(b) $(50 - 10) + 2 = 42$

(c) $10 + 10 + 10 + 5 = 35$

(d) $10 + 10 + 5 + 3 = 28$

(e) $10 + 10 + 10 + 4 = 34$

(f) $10 + 10 + 10 + 6 = 36$

(g) $10 + 10 + 9 = 29$

(h) $10 + 10 + 10 + 1 = 31$

(i) $(100 - 10) + 9 = 99$

❑

3. Addition

Exercise 3.1

1. (a)
$$\begin{array}{r} 247 \\ +\ 351 \\ \hline 598 \end{array}$$
(b)
$$\begin{array}{r} 444 \\ +\ 324 \\ \hline 768 \end{array}$$
(c)
$$\begin{array}{r} 792 \\ +\ 106 \\ \hline 898 \end{array}$$

2. (a)
$$\begin{array}{r} 71\mathbf{3}\mathbf{2} \\ +\ 2\mathbf{7}\mathbf{5}\mathbf{4} \\ \hline \mathbf{98}86 \end{array}$$
$a = 5, b = 4$
$c = 9, d = 8$

(b)
$$\begin{array}{r} 3\mathbf{2}\mathbf{2}\mathbf{1} \\ +1\mathbf{3}\mathbf{5}7 \\ \hline \mathbf{4}578 \end{array}$$
$a = 2, b = 1$
$c = 5, d = 4$

(c)
$$\begin{array}{r} 342\mathbf{0} \\ +\ 63\mathbf{6}5 \\ \hline \mathbf{97}85 \end{array}$$
$a = 0, b = 6$
$c = 7, d = 9$

3. (a)
$$\begin{array}{r} \text{Th H T O} \\ 2\ 5\ 4\ 5 \\ +\ 5\ 3\ 3\ 4 \\ \hline 7\ 8\ 7\ 9 \end{array}$$
(b)
$$\begin{array}{r} \text{Th H T O} \\ 6\ 2\ 4\ 3 \\ +\ 2\ 4\ 5\ 6 \\ \hline 8\ 6\ 9\ 9 \end{array}$$
(c)
$$\begin{array}{r} \text{Th H T O} \\ 5\ 3\ 3\ 3 \\ +\ 3\ 4\ 4\ 6 \\ \hline 8\ 7\ 7\ 9 \end{array}$$

4. (a)
$$\begin{array}{r} 452 \\ +\ 327 \\ \hline 779 \end{array}$$
(b)
$$\begin{array}{r} 436 \\ +\ 543 \\ \hline 979 \end{array}$$
(c)
$$\begin{array}{r} 82 \\ +\ 373 \\ \hline 455 \end{array}$$
(d)
$$\begin{array}{r} 543 \\ 22 \\ +\ 34 \\ \hline 599 \end{array}$$

5. (a)
$$\begin{array}{r} 2366 \\ +\ 2421 \\ \hline 4787 \end{array}$$
(b)
$$\begin{array}{r} 3984 \\ +\ 3015 \\ \hline 6999 \end{array}$$
(c)
$$\begin{array}{r} 3263 \\ +\ 2326 \\ \hline 5589 \end{array}$$

(d)
$$\begin{array}{r} 4322 \\ +\ 4535 \\ \hline 8857 \end{array}$$
(e)
$$\begin{array}{r} 7325 \\ +\ 2533 \\ \hline 9858 \end{array}$$

Exercise 3.2

1. (a) 5692 + 4280 = 9972

(b) 5692 + 2660 = 8352

(c) 5030 + 4080 = 9110

2. (a) 5737 + 2484 = 8221

(b) 4548 + 897 = 5445

(c) 5726 + 4085 = 9811

(d) 4258 + 3827 + 1012 = 9097

(e) 2149 + 3872 + 273 = 6294

(f) 3255 + 3827 + 1314 = 8396

3. (a) 5869 + 3587 = 9456

(b) 6889 + 376 + 482 = 7747

(c) 1058 + 49 + 7185 = 8292

(d) 2768 + 1325 + 897 = 4990

(e) 5852 + 3659 = 9511

(f) 7165 + 273 + 84 = 7522

Word Problems

1. Car travel between A and B = 254 km
Car travel between B and C = + 323 km
Total distance travelled by car = 577 km

2. Number of boys in a school = 424
Number of girls in a school = + 225
Total students in a school = 649

3. No. of mangoes in an orchard = 2016
No. of mangoes in another orchard = + 3823
Total mangoes in two orchard = 5839

4. Rajesh bought a mobile phone = ₹ 6732
He bought a cricket bat = ₹ + 1237
Total amount spend in all = ₹ 7969

5. Family monthly expenditure = ₹ 8276
Family monthly savings = ₹ +1423
Total monthly income = ₹ 9699

6. Tickets of hockey match sold on Monday = 3456
Tickets of hockey match sold on Tuesday = + 4032
Total tickets sold on both days = 7488

❑

4. Subtraction

Exercise 4.1

1. (a)
Th	H	T	O
5	6	7	5
– 1	0	2	5
4	6	5	0

(b)
Th	H	T	O
4	5	9	2
– 3	4	6	2
1	1	3	0

(c)
Th	H	T	O
8	4	6	0
– 2	3	3	0
6	1	3	0

2. (a) 5472 − **3160** = 2312; $a = 3, b = 6$, $c = 0, d = 3$

(b) 985**9** − **8539** = 1320; $a = 9, b = 8$, $c = 3, d = 3$

(c) 7**66**9 − **2**434 = 523**5**; $a = 6, b = 6$, $c = 2, d = 5$

3. (a) 7236 − 4329 = 2907

(b) 6052 − 3333 = 2719

(c) 710 − 442 = 268

(d) 8429 − 5219 = 3210

(e) 7638 − 6537 = 1101

(f) 2876 − 1051 = 1825

4. (a) 4256 − 4035 = 0221

(b) 1921 − 1463 = 0458

(c) 6329 − 4000 = 2329

(d) 1562 − 1052 = 0510

(e) 9824 − 7402 = 2422

5. (a) 5369 − 2734 = 2635

(b) 8074 − 5983 = 2091

(c) 5765 − 4998 = 0767

6. (a) 3104 − 1275 = 1829

(b) 6220 − 4046 = 2174

(c) 4008 − 2129 = 1879

(d) 9500 − 6075 = 3425 (e) 9047 − 5283 = 3764 (f) 3257 − 1824 = 1433

7. (a) 7429 − 5219 = 2210 (b) 8643 − 3521 = 5122 (c) 9638 − 8537 = 1101

(d) 4876 − 3051 = 1825 (e) 8653 − 343 = 8310 (f) 9734 − 5432 = 4302

8. (a) 5367 − 5146 = 0221 (b) 3685 − 2143 = 1542 (c) 4329 − 2000 = 2329

(d) 4895 − 3274 = 1621 (e) 5824 − 3702 = 2122

World Problems

1. Total number of students = 1654
Number of boys = − 670
Number of girls = 984

2. Total amount with Ashok = 849
He spends = − 587
Amount left = ₹ 262

❑

5. Addition & Subtraction

Exercise 5.1

1. (a) 632 + 345 = 977 (b) 2473 + 5425 = 7898 (c) 6743 + 352 = 7095

2. (a) 9276 + 568 = 9844 (b) 3284 + 4848 = 8132 (c) 6209 + 3058 = 9267

(d) 7635 + 2757 = 10392

(e) 9324 + 560 + 2222 = 12106

(f) 5555 + 333 + 4444 = 10332

3. (a) 74**8**7 + **1**815 = 930**2**

(b) 752**8** + **1**926 + 4135 = 1358**9**

$a = 8, b = 1, c = 2$ $a = 2, b = 1 c = 9$

4. (a) 45238 + 23652 = 68890

(b) 82657 + 13486 + 4525 = 100668

5. (a) 6935 + 1469 + 1247 = 9651

(b) 32729 + 13423 + 25145 = 71297

$a = 3, b = 1$ $a = 2, b = 5$
$c = 1, d = 1$ $c = 2, d = 7$

6. (a) 629 + 478 = 1107

(b) 478 + 527 = 1005

(c) 629 + 478 = 1107 and 478 + 629 = 1107

Hence 629 + 78 and 478 + 629 are same

7. (a) $427 + 733 = \mathbf{733} + 427$ (b) $333 + 444 = 444 + \mathbf{333}$

(c) $215 + \mathbf{629} = 629 + 215$ (d) $\mathbf{9872} + 3372 = 3372 + 9872$

Exercise 5.2

1. 46537 − 3124 = 43413

2. 85476 − 35042 = 50434

3. 5726 − 1016 = 4710

4. 2706 − 2001 = 0705

5. 8325 − 2436 = 5889

6. 433 − 344 = 089

7. 8000 − 6543 = 1457

8. 4115 − 2206 = 1909

Word Problems

1. A factory produced bulb in January = 793
A factory produced bulb in February = 1249
A factory produced bulb in March = + 2333
Total bulb produced = 4375

2. Number of men in a city = 9268
Number of women in a city = 7423
Number of children in a city = + 447
Total population of the city = 17138

3. Number of students passed = 729
Number of students failed = + 388
Total number of students appeared in examination = 1117

4. Bags of sugar produced by first factory = 947
Bags of sugar produced by second factory = 98
Bags of sugar produced by third factory = + 3907
Total Bags of sugar produced = 4952

5. Anil total income per month = ₹ 3256
This monthly expenditure = ₹ − 2438
Total money he save per moth = ₹ 0818

6. Price of a T.V set = ₹ 9352
Price of a V.C.R set = ₹ − 6758
Price of T.V is more than V.C.R by = ₹ 2594

7. Sum of two number = 7762
One of the number = − 4836
Other number = 2926

8. Sum of two number = 5555
One of the number = − 3232
Other number = 2323

9. First number = 5436
Second number = − 2794
Second number is less then first number = 2642

10. First number = 8324
Second number = − 5436
First number is more than second number = 2888

11. (a) $\begin{array}{r} 5414 \\ +\ 1031 \\ \hline 6445 \end{array} \Rightarrow \begin{array}{r} 6445 \\ -\ 1778 \\ \hline 4667 \end{array}$

(b) $\begin{array}{r} 7343 \\ +\,2100 \\ \hline 9443 \end{array}$ $\Rightarrow$ $\begin{array}{r} 9443 \\ -\,4463 \\ \hline 4980 \end{array}$

(c) $\begin{array}{r} 3386 \\ +\,3261 \\ \hline 6647 \end{array}$ $\Rightarrow$ $\begin{array}{r} 6647 \\ -\,4444 \\ \hline 2203 \end{array}$

(d) $\begin{array}{r} 99326 \\ +\,2233 \\ \hline 101559 \end{array}$ $\Rightarrow$ $\begin{array}{r} 101559 \\ -\,44321 \\ \hline 57238 \end{array}$

❑

6. Multiplication

Exercise 6.1

1. (a) $7 \times 8 = 56$ (b) $8 \times 7 = 56$ (c) Yes.

2. (a) $7 \times 0 = 0$ (b) $0 \times 8 = 0$ (c) $0 \times 15 = 0$
(d) $27 \times 0 = 0$ (e) $38 \times 0 = 0$ (f) $0 \times 86 = 0$
(g) $527 \times 0 = 0$

3. (a) $8 \times 1 = 8$ (b) $1 \times 8 = 8$ (c) $32 \times 1 = 32$
(d) $1 \times 58 = 58$ (e) $77 \times 1 = 77$ (f) $1 \times 98 = 98$
(g) $875 \times 1 = 875$

4. (a) $\begin{array}{r} 2 \\ \times\,3 \\ \hline 6 \end{array}$ (b) $\begin{array}{r} 4 \\ \times\,2 \\ \hline 8 \end{array}$ (c) $\begin{array}{r} 2 \\ \times\,4 \\ \hline 8 \end{array}$

(d) $\begin{array}{r} 32 \\ \times\,3 \\ \hline 96 \end{array}$ (e) $\begin{array}{r} 24 \\ \times\,2 \\ \hline 48 \end{array}$ (f) $\begin{array}{r} 22 \\ \times\,4 \\ \hline 88 \end{array}$

(g) $\begin{array}{r} 33 \\ \times\,3 \\ \hline 99 \end{array}$ (h) $\begin{array}{r} 34 \\ \times\,2 \\ \hline 68 \end{array}$

5. (a) $\begin{array}{r} 23 \\ \times\,4 \\ \hline 92 \end{array}$ (b) $\begin{array}{r} 24 \\ \times\,3 \\ \hline 72 \end{array}$ (c) $\begin{array}{r} 26 \\ \times\,3 \\ \hline 78 \end{array}$

(d) $\begin{array}{r} 36 \\ \times\ 2 \\ \hline 72 \end{array}$ (e) $\begin{array}{r} 124 \\ \times\ 3 \\ \hline 372 \end{array}$ (f) $\begin{array}{r} 356 \\ \times\ 2 \\ \hline 712 \end{array}$

(g) $\begin{array}{r} 234 \\ \times\ 3 \\ \hline 702 \end{array}$ (h) $\begin{array}{r} 224 \\ \times\ 4 \\ \hline 896 \end{array}$

6. (a) $\begin{array}{r} 12 \\ \times\ 4 \\ \hline 48 \end{array}$ (b) $\begin{array}{r} 12 \\ \times\ 5 \\ \hline 60 \end{array}$ (c) $\begin{array}{r} 22 \\ \times\ 5 \\ \hline 110 \end{array}$ (d) $\begin{array}{r} 22 \\ \times\ 8 \\ \hline 176 \end{array}$

(e) $\begin{array}{r} 54 \\ \times\ 4 \\ \hline 216 \end{array}$ (f) $\begin{array}{r} 72 \\ \times\ 5 \\ \hline 360 \end{array}$ (g) $\begin{array}{r} 45 \\ \times\ 5 \\ \hline 225 \end{array}$ (h) $\begin{array}{r} 63 \\ \times\ 3 \\ \hline 189 \end{array}$

(i) $\begin{array}{r} 123 \\ \times\ 5 \\ \hline 615 \end{array}$ (j) $\begin{array}{r} 234 \\ \times\ 6 \\ \hline 1404 \end{array}$ (k) $\begin{array}{r} 104 \\ \times\ 9 \\ \hline 936 \end{array}$ (l) $\begin{array}{r} 270 \\ \times\ 3 \\ \hline 810 \end{array}$

7. (a) $\begin{array}{r} 56 \\ \times\ 4 \\ \hline 224 \end{array}$ (b) $\begin{array}{r} 28 \\ \times\ 5 \\ \hline 140 \end{array}$ (c) $\begin{array}{r} 68 \\ \times\ 3 \\ \hline 204 \end{array}$ (d) $\begin{array}{r} 47 \\ \times\ 5 \\ \hline 235 \end{array}$

(e) $\begin{array}{r} 75 \\ \times\ 3 \\ \hline 225 \end{array}$ (f) $\begin{array}{r} 322 \\ \times\ 4 \\ \hline 1288 \end{array}$

8. (a) (i) 5 into 4 is 20
(ii) 5 times 4 is 20
(b) (i) 7 into 6 is 42
(ii) 7 times 6 is 42
(c) (i) 8 into 5 is 40
(ii) 8 times 5 is 40
(d) (i) 9 into 6 is 54
(ii) 9 times 6 is 54

Exercise 6.2

1. (a) $75 \times \mathbf{0} = 0$ (b) $75 \times \mathbf{1} = 75$ (c) $\mathbf{1} \times 75 = 75$
(d) $57 \times 25 \times \mathbf{0} = 0$ (e) $7285 \times 1 = \mathbf{7285}$ (f) $9290 \times \mathbf{0} = 0$
(g) $85 \times \mathbf{0} \times 123 = 0$ (h) $576 \times 999 \times \mathbf{0} = 0$

2. (a) $3 \times 10 = \mathbf{30}$ (b) $10 \times 75 = \mathbf{750}$
(c) $23 \times 100 = \mathbf{2300}$ (d) $1000 \times 44 = \mathbf{44000}$
(e) $\mathbf{56} \times 100 = 5600$ (f) $\mathbf{56} \times 1000 = 56000$
(g) $824 \times \mathbf{100} = 82400$ (h) $90 \times \mathbf{1000} = 90000$

3. (a) 100 × 42 = 200 + 400× = 4200

(b) 200 × 42 = 400 + 800× = 8400

(c) 300 × 22 = 600 + 600× = 6600

(d) 5000 × 8 = 40000

(e) $507 \times \mathbf{100} = 50700$

(f) $33 \times \mathbf{1000} = 330000$

4. (a) 4 × 2 = 8

(b) 200 × 4 = 800

(c) 2000 × 4 = 8000

(d) 20000 × 4 = 80000

(e) 40 × 5 = 200

(f) 20 × 6 = 120

(g) 400 × 5 = 2000

(h) 40000 × 5 = 200000

(i) 3 × 3 = 9

(j) 30 × 3 = 90

(k) 300 × 3 = 900

(l) 30000 × 3 = 90000

5. (a) $32 \times 30 = 960$

(b) $65 \times 400 = 26000$

(c) $432 \times 300 = 129600$

(d) $222 \times 6000 = 1332000$

(e) $1324 \times 20000 = 26480000$

Exercise 6.3

1. (a) 34 × 12 = 68 + 340× = 408

(b) 25 × 13 = 75 + 250 × = 325

(c) 26 × 14 = 104 + 260× = 364

(d) 13 × 14 = 52 + 130× = 182

(e) 25 × 15 = 125 + 250× = 375

(f) 51 × 15 = 255 + 510× = 765

(g) 39 × 20 = 00 + 780× = 780

(h) 13 × 12 = 26 + 130× = 156

2. (a) 51 × 16 = 306 + 510× = 816

(b) 40 × 16 = 240 + 400× = 640

(c) 25 × 18 = 200 + 250× = 450

(d) 76 × 14 = 304 + 760× = 1064

(e) 64 × 25 = 320 + 128× = 1600

(f) 80 × 17 = 560 + 80× = 1360

(g) 73 × 26 = 438 + 146× = 1898

(h) 24 × 19 = 216 + 24× = 456

3. (a) 275 × 12 = 550 + 275× = 3300

(b) 123 × 34 = 492 + 369× = 4182

(c) 348 × 23 = 1044 + 696× = 8004

(d) 423 × 24 = 1692 + 846× = 10152

(e) 232 × 44 = 928 + 928× = 10208

(f) 234 × 17 = 1638 + 234× = 3978

(g) 172 × 26 = 1032 + 344× = 4472

(h) 148 × 36 = 888 + 444× = 5328

Exercise 6.4

1. (a) 98 × 7 = 686

(b) 43 × 2 = 86

(c) 33 × 3 = 99

(d) 14 × 3 = 42

2. (a) 73 × 8 = 584

(b) 92 × 6 = 552

(c) 126 × 4 = 504

(d) 127 × 3 = 381

(e) 135 × 4 = 540

(f) 336 × 3 = 1008

(g) 153 × 4 = 612

(h) 225 × 3 = 675

3. (a) 200 × 12 = 400 + 200× = 2400

(b) 300 × 15 = 1500 + 300× = 4500

(c) 400 × 18 = 3200 + 400× = 7200

(d) 600 × 11 = 600 + 600× = 6600

4. (a) $\begin{array}{r} 30 \\ \times\ 3 \\ \hline 90 \end{array}$ (b) $\begin{array}{r} 20 \\ \times\ 5 \\ \hline 100 \end{array}$ (c) $\begin{array}{r} 40 \\ \times\ 8 \\ \hline 320 \end{array}$ (d) $\begin{array}{r} 20 \\ \times\ 12 \\ \hline 40 \\ +20\times \\ \hline 240 \end{array}$

(e) $\begin{array}{r} 40 \\ \times\ 12 \\ \hline 80 \\ +\ 40\times \\ \hline 480 \end{array}$ (f) $\begin{array}{r} 60 \\ \times\ 25 \\ \hline 300 \\ +\ 120\times \\ \hline 1500 \end{array}$

5. (a) $\begin{array}{r} 2032 \\ \times\ 3 \\ \hline 6096 \end{array}$ (b) $\begin{array}{r} 2756 \\ \times\ 3 \\ \hline 8268 \end{array}$ (c) $\begin{array}{r} 2869 \\ \times\ 2 \\ \hline 5738 \end{array}$ (d) $\begin{array}{r} 1867 \\ \times\ 2 \\ \hline 3734 \end{array}$

(e) $\begin{array}{r} 37 \\ \times\ 15 \\ \hline 185 \\ +\ 37\times \\ \hline 555 \end{array}$ (f) $\begin{array}{r} 42 \\ \times\ 37 \\ \hline 294 \\ +\ 126\times \\ \hline 1554 \end{array}$

6. (a) $\begin{array}{r} 275 \\ \times\ 22 \\ \hline 550 \\ +\ 550\times \\ \hline 6050 \end{array}$ (b) $\begin{array}{r} 164 \\ \times\ 13 \\ \hline 492 \\ +\ 164\times \\ \hline 2132 \end{array}$ (c) $\begin{array}{r} 124 \\ \times\ 21 \\ \hline 124 \\ +\ 248\times \\ \hline 2604 \end{array}$

(d) $\begin{array}{r} 348 \\ \times\ 14 \\ \hline 1392 \\ +\ 348\times \\ \hline 4872 \end{array}$ (e) $\begin{array}{r} 137 \\ \times\ 35 \\ \hline 685 \\ +\ 411\times \\ \hline 4795 \end{array}$ (f) $\begin{array}{r} 203 \\ \times\ 15 \\ \hline 1015 \\ +\ 203\times \\ \hline 3045 \end{array}$

7. (a) $43\times(2\times5)=43\times10=430$

(b) $86\times(20\times5)=86\times100=8600$

(c) $38\times(4\times25)=38\times100=3800$

(d) $47\times(2\times5)=47\times10=470$

(e) $38\times(5\times20)=38\times100=3800$

(f) $98\times(25\times4)=98\times100=9800$

(g) $23\times(50\times2)=23\times100=2300$

(h) $47\times(500\times2)=47\times(1000)=47000$

8. (a)
$$\begin{array}{r} 92 \\ \times\ 30 \\ \hline 00 \\ +\ 276\times \\ \hline 2760 \end{array}$$

(b)
$$\begin{array}{r} 124 \\ \times\ 50 \\ \hline 000 \\ +\ 620\times \\ \hline 6200 \end{array}$$

(c)
$$\begin{array}{r} 239 \\ \times\ 40 \\ \hline 000 \\ +\ 956\times \\ \hline 9560 \end{array}$$

(d)
$$\begin{array}{r} 222 \\ \times\ 400 \\ \hline 000 \\ 000\times \\ +\ 888\times\times \\ \hline 88800 \end{array}$$

9. (a)
$$\begin{array}{r} 426 \\ \times\ 87 \\ \hline 2982 \\ +\ 3408\times \\ \hline 37062 \end{array}$$

(b)
$$\begin{array}{r} 2015 \\ \times\ 43 \\ \hline 6045 \\ +\ 8060\times \\ \hline 86645 \end{array}$$

(c)
$$\begin{array}{r} 657 \\ \times\ 24 \\ \hline 2628 \\ +\ 1314\times \\ \hline 15768 \end{array}$$

(d)
$$\begin{array}{r} 122 \\ \times\ 24 \\ \hline 488 \\ +\ 244\times \\ \hline 2928 \end{array}$$

(e)
$$\begin{array}{r} 226 \\ \times\ 28 \\ \hline 1808 \\ +\ 452\times \\ \hline 6328 \end{array}$$

(f)
$$\begin{array}{r} 322 \\ \times\ 32 \\ \hline 644 \\ +\ 966\times \\ \hline 10304 \end{array}$$

Word Problems

1. Number of students in each section of class IV = 46
Number of section in class IV = × 6
Total students in 6 sections = 276

2. Total trees in the forest = 212
Chimps live on each tree = × 8
Total chimps in the forest = 1696

3. Number of rows in the auditorium = 200
Number of peoples sit in each row = × 64
= 800
= + 1200×
Total number of peoples in the auditorium = 12800

4. Number of ballons = 720
Number of packets = × 12
= 1440
= + 720×
Total number of ballons in 12 packets = 8640

5. Number of oranges in a box = 124
Total number of boxes = × 139
= 1116
= 372×
= +124××
Total number of oranges in the boxes = 17236

6. Total number of baskets = 207
Number of mangoes in each basket = × 187
= 1449
= 1656×
= + 207××
Total number of mangoes in the baskets = 38709

❑

7. Division

Exercise 7.1

1. (a) $36 \div 6 \times 5 \Rightarrow 6 \times 5 = 30$ (b) $18 \div 9 \times 7 \Rightarrow 2 \times 7 = 14$
(c) $84 \div 12 \times 15 \Rightarrow 7 \times 15 = 105$ (d) $13 \times 84 \div 12 \Rightarrow 13 \times 7 = 91$
(e) $22 \times 144 \div 16 \Rightarrow 22 \times 9 = 198$
(f) $35 \times 256 \div 8 \Rightarrow 35 \times 32 = 1120$
(g) $96 \div 8 \times 7 \Rightarrow 12 \times 7 = 84$
(h) $24 \div 6 \times 2 \Rightarrow 4 \times 2 = 8$
(i) $24 \times 6 \div 2 \Rightarrow 24 \times 3 = 72$

2. (b) $20 \div 10 = 2, 20 \div 2 = 10$ (c) $30 \div 5 = 5, 30 \div 6 = 5$
(d) $16 \div 8 = 2, 16 \div 2 = 8$ (e) $42 \div 7 = 6, 42 \div 6 = 7$
(f) $18 \div 6 = 3, 18 \div 3 = 6$ (g) $36 \div 9 = 4, 36 \div 4 = 9$

3. (a)
18
−3 One time
15
−3 Second time
12
−3 Third time
9
−3 Fourth time
6
−3
3
−3 Sixth time
0

(b)
27
−9 One time
18
−9 Second time
9
−9 Third time
0

(c) 15
-5 One time
10
-5 Second time
5
-5 Third time
0
$15 \div 5 = 3$

(d) 14
-2 One time
12
-2 Second time
10
-2 Third time
8
-2 Fourth time $14 \div 2 = 7$
6
-2 Fifth time
4
-2 Sixth time
2
-2 Seventh time
0

(e) 20
-4 One time
16
-4 Second time $20 \div 4 = 5$
12
-4 Third time
08
-4 Fourth time
4
-4 Fifth time
0

Exercise 7.2

1. (a) 2) 28 (14
$-2\downarrow$
8
-8
0

(b) 4) 48 (12
$-4\downarrow$
8
-8
0

(c) 3) 39 (13
-3
9
-9
0

(d) 2) 68 (34
$-6\downarrow$
8
-8
0

2. (a) 5) 505 (101
$-5\downarrow$
05
-5
0

(b) 2) 268 (134
$-2\downarrow$
6
$-6\downarrow$
8
-8
0

(c) 6) 666 (111
$-6\downarrow$
6
$-6\downarrow$
6
-6
0

(d) 2) 488 (244
$-4\downarrow$
8
$-8\downarrow$
8
-8
0

(e) 4) 844 (211
−8↓
4
−4↓
4
−4
0

(f) 3) 660 (220
−6↓
6
−6↓
0

(g) 6) 600 (100
−6
00

(h) 2) 286 (143
−2↓
8
−8↓
6
−6
0

3. (a) 7) 56 (8
−56
0
Quotient = 8
Remainder = 0

(b) 4) 24 (6
−24
0
Quotient = 6
Remainder = 0

(c) 5) 45 (9
−45
0
Quotient = 9
Remainder = 0

(d) 6) 66 (11
−6↓
6
−6
0
Quotient = 11
Remainder = 0

(e) 2) 84 (42
−8↓
4
−4
0
Quotient = 42
Remainder = 0

(f) 3) 603 (201
−6↓↓
03
−3
0
Quotient = 201
Remainder = 0

(g) 2) 480 (240
−4↓
8
−8↓
0
Quotient = 24
Remainder = 0

(h) 4) 408 (102
−4↓↓
08
−8
0
Quotient = 102
Remainder = 0

(i) 3) 339 (113
−3↓
3
−3↓
9
−9
0
Quotient = 113
Remainder = 0

(j) 5) 550 (110
−5↓
5
−5↓
00
Quotient = 110
Remainder = 0

4. (a) 3) 372 (124
−3↓
7
−6↓
12
12
0

(b) 8) 886 (110
−8↓
8
−8↓
6
Quotient = 110
Remainder = 6

(c) 2) 234 (117
−2↓
3
−2↓
14
−14
0

(d) 4) 952 (238
−8↓
15
−12↓
32
−32
0

(e) 5) 575 (115
−5↓
7
−5↓
25
−25
0

(f) 2) 490 (245
−4↓
9
−8↓
10
−10
0

(g) 6) 684 (114
−6↓
8
−6↓
24
24
0

(h) 7) 784 (112
−7↓
8
−7↓
14
−14
0

(i) 7) 862 (123
−7↓
16
−14↓
22
21
1

(j) 8) 948 (118
−8↓
14
−8↓
68
−64
4

(k) 3) 927 (309
−9↓↓
27
27
0

5. (a) 6) 5150 (858
−48
35
−30
50
−48
2

Verify Dividend = Divisor × Quotient + Remainder
$5150 = 6 \times 858 + 2$
$5150 = 5148 + 2$
$5150 = 5150$
Hence verified

(b) 4) 3693 (923
−36↓
9
−8↓
13
−12
01

Verify Dividend = Divisor × Quotient + Remainder
$3693 = 4 \times 923 + 1$
$3693 = 3692 + 1$
$3693 = 3693$
Hence verified

(c) 3) 1523 (507
−15↓↓
23
−21
2

Verify Dividend = Divisor × Quotient + Remainder
$1523 = 3 \times 507 + 2$
$1523 = 1521 + 2$
$1523 = 1523$
Hence verified

(d) 7) 2946 (420
−28↓
14
−14↓
6

Verify Dividend = Divisor × Quotient + Remainder
$1523 = 3 \times 507 + 2$
$1523 = 1521 + 2$
$1523 = 1523$
Hence verified

(d) 7) 2946 (420
−28↓
14
−14↓
6

Verify Dividend = Divisor × Quotient + Remainder
$2946 = 7 \times 420 + 6$
$2946 = 2940 + 6$
$2946 = 2946$
Hence verified

(e) 9) 3064 (340
−27↓
36
36↓
4

Verify Dividend = Divisor × Quotient + Remainders
$3064 = 9 \times 340 +$
$3064 = 3060 + 4$
$3064 = 3064$
Hence verified

Exercise 7.3

1. (a) 12) 3588 (299
−24↓
118
−108↓
108
−108
0

Check : Divisor × Quotient + Remainder = Dividend
$= 12 \times 299 + 0 \quad = 3588$
$= 3588 + 0 \qquad = 3588$

(b) 15) 1294 (86
−120↓
94
−90
4

Check : Divisor × Quotient
+ Remainder = Dividend
= 15 × 86 + 4 = 1294
= 1290 + 4 = 1294
= 1294 = 1294

(c) 13) 4444 (341
−39↓
54
−52↓
24
−13
11

Check : Divisor × Quotient + Remainder
= Divident
= 13 × 341 + 11 = 44444
= 4433 + 11 = 4444
= 4444 = 4444

(d) 16) 8270 (516
−80↓
27
−16↓
110
−96
14

Check : Divisor × Quotient
+ Remainder = Dividend
= 16 × 516 + 14 = 8270
= 8256 + 14 = 8270
= 8270 = 8270

(e) 25) 6203 (248
−50↓
120
−100↓
203
200
3

Check : Divisor × Quotient
+ Remainder = Dividend
= 25 × 248 + 3 = 6203
= 6200 + 3 = 6203
= 6203 = 6203

(f) 12) 1608 (134
−12↓
40
−36↓
48
−48
0

Divisor × Quotient + Remainder = Dividend
Here, 12 × Quotient + 0 = Dividend
12 × Quotient = 1608
Quotient = 1608 ÷ 12 = 134

(g) 26) 8528 (328
−78↓
72
−52↓
208
208
0

Divisor × Quotient + Remainder = Dividend
Divisor × 26 + 0 = 8528
Divisor × 26 = 8528
Divisor = 8528 ÷ 26 = 328

(h) Dividend = Divisor × Quotient + Remainder
Dividend = 24 × 105 + 18
Dividend = 2520 + 18
Dividend = 2538

2. (a) 10) 70 (7
−70
0

Quotient = 7
Remainder = 0

(b) 10) 64 (6
−60
4

Quotient = 6
Remainder = 4

(c) 10) 457 (45
−40
57
−50
7

Quotient = 45
Remainder = 7

(d) 100) 732 (7
−700
32

Quotient = 7
Remainder = 32

(e) 100) 8327 (83
−800↓
327
300
27

Quotient = 83
Remainder = 27

(f) 1000) 8327 (8
−8000
327

Quotient = 8
Remainder = 327

(g) 10) 4623 (462
−40↓
62
−60↓
23
−20
3

Quotient = 462
Remainder = 3

(h) 100) 4623 (46
−400
623
−600
23

Quotient = 46
Remainder = 23

(i) 1000) 4623 (4
−4000
623

Quotient = 4
Remainder = 623

Word Problems

1. Number of apples to be packed = 1725
Number of boxes = 23
Number of apples in each box = 23) 1725 (75
= 75
−161↓
115
−115
0

2. Product of two numbers = 9744
One number equal to = 42
Other number = 42) 9744 (232
= 232
−84
134
−126
84
−84
0

3. Total number of words = 4184
Each Sentence having words = 8
Total Sentences to be made = 8) 4184 (523
= 523
−40
18
−16
24
24
0

4. Total money to buy rulers = ₹ 510
Cost of each ruler = ₹ 6
Total no. of rulers bought = 6) 510 (85
= 85
−48
30
−30
0

5. Product of two number = 576
One of the number = 8
Other number = 8) 576 (72
= 72
−56
16
−16
0

❑

8. Factors and Multiples

Exercise 8.1

1. $\Rightarrow$ $15 \div 1 = 15, 15 \div 3 = 5, 15 \div 5 = 3, 15 \div 15 = 1$
Factors of 15 are 1, 3, 5 and 15,

$\Rightarrow$ $25 \div 1 = 25, 25 \div 5 = 5, 25 \div 25 = 1$
Factors of 25 are 1, 5 and 25

$\Rightarrow$ $44 \div 1 = 44, 44 \div 2 = 22, 44 \div 4 = 11, 44 \div 11 = 4,$
$44 \div 22 = 2\ 44 \div 44 = 1$
Factors of 44 are 1, 2, 4, 11, 22 and 44

$\Rightarrow$ $50 \div 1 = 50, 50 \div 2 = 25, 50 \div 5 = 10, 50 \div 10 = 5, 50 \div 25 = 2, 50 \div 50 = 1$
Factors of 50 are 1, 2, 5, 10, 25 and 50

$\Rightarrow$ $52 \div 1 = 52, 52 \div 2 = 26, 52 \div 4 = 13, 52 \div 13 = 4$
$52 \div 26 = 2, 52 \div 52 = 1$
Factors of 52 are 1, 2, 4, 13, 26 and 52

$\Rightarrow$ $85 \div 1 = 85, 85 \div 5 = 17, 85 \div 17 = 5, 85 \div 85 = 1$
Factors of 85 are 1, 5, 17 and 85

2. $\Rightarrow$ $33 = 1 \times 33 = 33, 3 \times 11 = 33, 11 \times 3 = 33, 33 \times 1 = 33$
Factors are 1, 3, 11 and 33.

$\Rightarrow$ $1 \times 56 = 56, 2 \times 28 = 56, 4 \times 14 = 56, 7 \times 8 = 56, 8 \times 7 = 56$
$14 \times 3 = 56, 28 \times 2 = 56, 56 \times 1 = 56$
Factors of 56 are 1, 2, 4, 7, 8, 14, 28 and 56.

$\Rightarrow$ $1 \times 72 = 72, 2 \times 36 = 72, 3 \times 24 = 72, 4 \times 18 = 72, 6 \times 12 = 72,$
$8 \times 9 = 72, 9 \times 8 = 72, 12 \times 6 = 72, 18 \times 4 = 72, 24 \times 3 = 72,$
$36 \times 2 = 72, 72 \times 1 = 72$
Factors of 72 are 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36 and 72

$\Rightarrow$ $1 \times 28 = 28, 2 \times 14 = 28, 4 \times 7 = 28, 7 \times 4 = 28$
$14 \times 2 = 28, 28 \times 1 = 28$
Factors of 28 are 1, 2, 4, 7, 14 and 28.

$\Rightarrow$ $1 \times 49 = 49, 7 \times 7 = 49, 49 \times 1 = 49$
Factors of 49 are 1, 7 and 49

$\Rightarrow$ $1 \times 84 = 84, 2 \times 42 = 84, 3 \times 28 = 84, 4 \times 21 = 84\ 6 \times 14 = 84$
$7 \times 12 = 84\ 12 \times 7 = 84, 14 \times 6 = 84, 21 \times 4 = 84, 28 \times 3 = 84,$
$42 \times 2 = 84, 84 \times 1 = 84$
Factors of 84 = 1, 2, 3, 4, 6, 7, 12, 14, 21, 28, 42 and 84

3. (a) $32 \div 8 = 4$ Hence 8 is a factor of 32

(b) $36 \div 14$, Hence 14 connot divide 36, so it is not a factor of 36.

(c) $96 \div 12 = 8$, Hence 12 is a factor of 96.

(d) $38 \div 6$, Hence 6 cannot divide 38, so it is not a factor of 38.

(e) $40 \div 9$, Hence 9 cannot divide 40, so it is not a factor of 40.

(f) $42 \div 6 = 7$ Hence 6 is a factor of 42.

(g) $52 \div 13 = 4$ Hence 13 is a factor of 52.

(h) $66 \div 11 = 6$ Hence 11 is a factor of 66.

(i) $91 \div 7 = 13$ Hence 7 is a factor of 91.

(j) $85 \div 12$ Hence 12 connot divide 85, so it is not a factor of 85.

4. (a) $24 = 24 \div 2 = 12, 4 = 6$ Hence pair of factors are 2, 4.

(b) $26 = 26 \div 2 = 13, 26 \div 13 = 2$ Hence pair of factors are 2 and 13.

(c) $32 = 32 \div 4 = 8, 32 \div 8 = 4$ Hence pair of factors are 4 and 8.

(d) $20 \div 4 = 5, 20 \div 5 = 4$, Hence pair of factors are 4 and 5.

(e) $64 \div 4 = 16, 64 \div 8 = 8$ Hence pair of factors are 8 and 4.

Exercise 8.2

1. (a) 2 (b) unique (c) 4
   (d) 2 (e) 3 (f) twin prime
   (g) 2, 3, 5, and 7

2. Prime number : 17, 19, 23, 29, 31 are prime number from 15 to 35 as they have only two factor i.e. one and the number itself.
Composite number : 15, 16, 18, 20, 21, 22, 24, 25, 26, 27, 28 30, 32, 33, 34 and 35 are composite numbers from 15 to 35 as they have more than two factors for factors of 15 are 1, 3, 5, 15.

3. 26, 27, 36, 39, 45, 51, 52, 54, 57, 58 and 60 are composite number as they have more than two factors and 43, 59 and 37 are prime number as they have only two factors i.e. one and the number itself No, these numbers does not have any even prime number.

4. (a) $27 =$

3	27
3	9
3	3
	1

$27 = 3 \times 3 \times 3$

(b) $36 =$

2	36
2	18
3	9
3	3
	1

$36 = 2 \times 2 \times 3 \times 3$

(c) $45 =$

$45 = 3 \times 3 \times 5$

3	45
3	15
5	5
	1

(d) $55 =$

$55 = 5 \times 11$

5	55
11	11
	1

(e) $48 =$

$48 = 2 \times 2 \times 2 \times 2 \times 3$

2	48
2	24
2	12
2	6
3	3
	1

(f) $56 =$

$56 = 2 \times 2 \times 2 \times 7$

2	56
2	28
2	14
7	7
	1

Exercise 8.3

1. (a)

2	16	2	40	
2	8	2	20	Factors of $16 = 2 \times 2 \times 2 \times 2$
2	4	2	10	Factors of $40 = 2 \times 2 \times 2 \times 5$
2	2	5	5	Common factors $= 2 \times 2 \times 2$
	1		1	H.C.F $= 8$

2. (a)

2	8	2	20	
2	4	2	10	Factors of $8 = 2 \times 2 \times 2$
2	2	5	5	Factors of $20 = 2 \times 2 \times 5$
	1		1	H.C.F. $= 2 \times 2 = 4$

(b)

3	15
5	5
	1

5	35
7	7
	1

Factors of $15 = 3 \times 5$

Factors of $35 = 5 \times 7$

H.C.F $= 5$

(c)

5	25
5	5
	1

2	50
5	25
5	5
	1

Factors of $25 = 5 \times 5$

Factors of $50 = 2 \times 5 \times 5$

H.C.F. $= 5 \times 5 = 25$

(d)

2	18
3	9
3	3
	1

2	40
2	20
2	10
5	5
	1

Factors of $18 = 2 \times 3 \times 3$

Factors of $40 = 2 \times 2 \times 2 \times 5$

H.C.F. $= 2$

(e)

2	2
	1

2	4
2	2
	1

2	6
3	3
	1

Factors of $2 = 2$

Factors of $4 = 2 \times 2$

Factors of $6 = 2 \times 3$

H.C.F. $= 2$

(f)

2	6
3	3
	1

3	9
3	3
	1

2	12
2	6
3	3
	1

Factors of $6 = 2 \times 3$

Factors of $9 = 3 \times 3$

Factors of $12 = 2 \times 2 \times 3$

H.C.F. $= 3$

Exercise 8.4

1. (a) $10 \times 1 = 10, 10 \times 2 = 20$ (b) 40, 42, 44, 46, 48, 50
   (c) $13 \times 1 = 13, 13 \times 2 = 26, 13 \times 3 = 39, 13 \times 4 = 52, 13 \times 5 = 65, 13 \times 6 = 78$
   (d) $100 \times 1 = 100, 100 \times 2 = 200, 100 \times 3 = 300, 100 \times 4 = 400$
   (e) 108, 126, 144 (f) $12 \times 8 = 96$
   (g) $1 \times 72 = 72, 2 \times 36 = 72, 3 \times 24 = 72, 4 \times 18 = 72, 6 \times 12 = 72, 8 \times 9 = 72, 9 \times 8 = 72, 12 \times 6 = 72, 18 \times 4 = 72, 24 \times 3 = 72, 36 \times 2 = 72, 72 \times 1 = 72$
   Number having 72 as multiples = 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36 and 72

(h) $9 \times 1 = 9, 9 \times 2 = 18, 9 \times 3 = 27, 9 \times 4 = 36, 9 \times 5 = 45, 9 \times 6 = 54$
Multiples of 9 less than 60 = 9, 18, 27, 36, 45, 54.

(i) $21 \times 2 = 42, 21 \times 3 = 63, 21 \times 4 = 84$
So multiples are 42, 63 and 84.

(j) Multiples of 4 = 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44 ……
Multiples of 5 = 5, 10, 15, 20, 25, 30, 35, 40, 45 ……
First two common multiples of 4 an 5 are 20, 40.

(k) Multiples of 2 = 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98.
Multiples of 5 = 5, 10, 15, 20, 25, 30, 35, 40, 45, 55, 60 65, 70, 75, 80, 85, 90, 95.
Common multiples = 10, 20, 30, 40, 50, 60, 70, 80 and 90.

(l) Multiples of 2 = 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26 28, 30, 32, 34 …… .
Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36 …… .
Multiples of 5 = 5, 10, 15, 20, 25, 30, 35, 40 …… .
First common multiple of 2, 3 and 5 = 30.

2. (a) Multiples of 5 = 5, 10, 15, 20, 25, 30, 35, 40, 45 50, 55, 60, 65 …… .
Multiples of 6 = 6, 12, 18, 24, 30, 36, 442, 48, 54 60, 66, 72 …… .
Two common multiples of 5 and 6 are 30 and 60.

(b) Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24 …… .
Multiples of 5 = 5, 10, 15, 20, 25, 30, 35 …… .
Two common multiples of 3 and 5 are 15 and 30.

(c) Multiples of 2 = 2, 4, 6, 8, 10, 12, 14, 16, 18, 20 …… .
Multiples of 4 = 4, 8, 12, 16, 20, 24, 28 …… .
Two common multiples of 2 and 4 are 4 and 80.

(d) Multiples of 3 = 3, 6, 9, 12, 15, 18 …… .
Multiples of 6 = 6, 12, 18, 24, 30 …… .
Two common multiples of 3 and 6 are 6 and 12.

(e) Multiples of 4 = 4, 8, 12, 16, 20, 24, 28, 32 …… .
Multiples of 8 = 8, 16, 24, 32, 40, 48 …… .
Two common multiples of 4 and 8 are 8 and 16.

(f) Multiples of 4 = 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44 …… .
Multiples of 5 = 5, 10, 15, 20, 25, 30, 35, 40, 45, 50 …… .
Two common multiples of 4 and 5 are 20 and 40.

(g) Multiples of 5 = 5, 10, 15, 20, 25, 30 …… .
Multiples of 10 = 10, 20, 30, 40, 50 …… .
Two common multiples of 5 and 10 are 10 and 20.

(h) Multiples of 2 = 2, 4, 6, 8, 10, 12 …… .
Multiples of 6 = 6, 12, 18, 24, 30 …… .
Two common multiples of 2 and 6 are 6 and 12.

3. (a) True because 30 is a multiple of 5 i.e. $5 \times 6 = 30$.

(b) False because 18 is not a multiple of 8.

(c) False because 7 is not a multiple of 21, 7 is the factor of 21.

(d) True because 30 is a common multiple of 5 and 6.

4. (a) Multiples of 6 = 6, 12, 18, 24, 30, 36 …… .
Multiples of 12 = 12, 24, 36, 48, 60 …… .
First two common multiples of 6 and 12 are 12 and 24.

(b) Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45 …… .
Multiples of 7 = 7, 14, 21, 28, 35, 42, 49 …… .
First two common multiples of 3 and 7 are 21 and 42.

(c) Multiples of 4 = 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44, 48, 52, 56, 60, 64, 68, 72, 76 …… .
Multiples of 9 = 9, 18, 27, 36, 45, 54, 63, 72, 81, 90 …… .
First two common multiples of 4 and 9 are 36 and 72.

(d) Multiples of 5 = 5, 10, 15, 20, 25, 30 …… .
Multiples of 10 = 10, 20, 30, 40, 50 …… .
First two common multiples of 5 and 10 are 10 and 20.

5. (a) Multiples of 4 = 4, 8, 12, 16, 20, 24, 28 …… .
Multiples of 6 = 6, 12, 18, 24, 30, 36 …… .
First three common multiples of 4 and 6 are 12, 24 and 36.

(b) Multiples of 6 = 6, 12, 18, 24, 30, 36, 42, 48, 54, 60 …… .
Multiples of 9 = 9, 18, 27, 36, 45, 54, 63, 72 …… .
First three common multiples of 6 and 9 are 18, 36 and 54

(c) Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 54, 57, 60, 63, 66 …… .
Multiples of 7 = 7, 14, 21, 28, 35, 42, 49, 56, 63, 70 …… .
First three common multiples of 3 and 7 are 21, 42 and 63.

(d) Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30 …… .
Multiples of 9 = 9, 18, 27, 36, 45, 54 …… .
First three common multiples of 3 and 9 are 9, 18 and 27.

(e) Multiples of 9 = 9, 18, 27, 36, 45, 54, 63, 72, 81, 99, 108, 117, 126, 135, 144 …… .
Multiples of 15 = 15, 30, 45, 60, 75, 90, 105, 120, 135 …… .
First three common factors of 9 and 15 are 45, 90 and 135.

(f) Multiples of 4 = 4, 8, 12, 16, 20, 24, 28, 32, 40 …… .
Multiples of 12 = 12, 24, 36, 48, 60 …… .
First three common multiples of 4 and 12 are 12, 24 and 36.

(g) Multiples of 10 = 10, 20, 30, 40, 50, 60, 70, 80 …… .
Multiples of 15 = 15, 30, 5, 60, 75, 90 …… .
First three common multiples of 10 and 15 are 30, 60 and 90.

(h) Multiples of 3 = 3, 6, 9, 12, 15, 18, 21, 24 …… .
Multiples of 6 = 6, 12, 18, 24, 30, 36 …… .
First three common multiples of 3 and 6 are 6, 12, and 18.

(i) Multiples of 10 = 10, 20, 30, 40, 50, 60, 70, 80 …… .
Multiples of 20 = 20, 40, 60, 80, 100, 120 …… .
First three common multiples of 10 and 20 are 20, 40 and 60.

(j) Multiples of 2 = 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30 …… .
Multiples of 10 = 10, 20, 30, 40, 50, 60, 70, 80, 90, 100 …… .
First three common multiples of 2 and 10 are, 10, 20, 30.

(k) Multiples of 6 = 6, 12, 18, 24, 30, 36, 42 …… .
Multiples of 12 = 12, 24, 36, 48, 60 …… .
First three common multiples of 6 and 12 = 12, 24, 36 …… .

(l) Multiples of 8 = 8, 16, 24, 32, 40, 48, 56 …… .
Multiples of 16 = 16, 32, 48, 64 …… .
First three common multiples of 8 and 16 = 16, 32 and 48.

6. (a)

2 | 4		2 | 8		
2 | 2		2 | 4		Factors of $4 = 2 \times 2$
1		2 | 2		Factors of $8 = 2 \times 2 \times 2$
		1		L.C.M. $= 2 \times 2 \times 2 = 8$

(b)

2 | 8		2 | 12		
2 | 4		2 | 6		Factors of $8 = 2 \times 2 \times 2$
2 | 2		3 | 3		Factors of $12 = 2 \times 2 \times 3$
1		1		L.C.M. $= 2 \times 2 \times 2 \times 3 = 24$

(c)

5 | 5		2 | 10		
1		5 | 5		Factors of $5 = 5 \times 1$
		1		Factors of $10 = 2 \times 5$
				L.C.M. of 5 and $10 = 2 \times 5 = 10$

(d)

7 | 7		3 | 21		
1		7 | 7		Factors of $7 = 7 \times 1$
		1		Factors of $21 = 3 \times 7$
				L.C.M. $= 3 \times 7 = 21$

(e)

3	3
	1

7	7
	1

Factors of $3 = 3 \times 1$

Factors of $7 = 7 \times 1$

L.C.M. $= 3 \times 7 = 21$

(f)

3	9
3	3
	1

3	15
5	5
	1

Factors of $9 = 3 \times 3$

Factors of $15 = 3 \times 5$

L.C.M. $= 3 \times 3 \times 5 = 45$

(g)

2	6
3	3
	1

2	8
2	4
2	2
	1

Factors of $6 = 2 \times 3$

Factors of $8 = 2 \times 2 \times 2$

L.C.M. $= 2 \times 2 \times 2 \times 3 = 24$

(h)

3	9
3	3
	1

3	3
	1

Factors of $9 = 3 \times 3$

Factors of $3 = 3 \times 1$

L.C.M. $= 3 \times 3 = 9$

(i)

2	8
2	4
2	2
	1

2	10
5	5
	1

Factors of $8 = 2 \times 2 \times 2$

Factors of $10 = 2 \times 5$

L.C.M. $= 2 \times 2 \times 2 \times 5 = 40$

(j)

2	6
3	3
	1

3	9
3	3
	1

Factors of $6 = 2 \times 3$

Factors of $9 = 3 \times 3$

L.C.M. $= 2 \times 3 \times 3 = 18$

(k)

2	6
3	3
	1

2	12
2	6
3	3
	1

Factors of $6 = 2 \times 3$

Factors of $12 = 2 \times 2 \times 3$

L.C.M. $= 2 \times 2 \times 3 = 12$

(l)

5	5
	1

3	15
5	5
	1

Factors of $5 = 1 \times 5$

Factors of $15 = 3 \times 5$

L.C.M. $= 3 \times 5 = 15$

(m)

2	2
	1

2	4
2	2
	1

2	6
3	3
	1

Factors of $2 = 2 \times 1$

Factors of $4 = 2 \times 2$

Factors of $6 = 2 \times 3$

L.C.M. $= 2 \times 2 \times 3 \times 5 = 60$

(n)

2	6
3	3
	1

2	10
5	5
	1

2	12
2	6
3	3
	1

Factors of $6 = 2 \times 3$

Factors of $10 = 2 \times 5$

Factors of $12 = 2 \times 2 \times 3$

L.C.M. $= 2 \times 2 \times 3 \times 5 = 60$

(o)

2	4
2	2
	1

2	6
3	3
	1

2	12
2	6
3	3
	1

Factors of $4 = 2 \times 2$

Factors of $6 = 2 \times 3$

Factors of $12 = 2 \times 2 \times 3$

L.C.M. $= 2 \times 2 \times 3 = 12$

(p)

3	3
	1

5	5
	1

2	10
5	5
	1

Factors of $3 = 3 \times 1$

Factors of $5 = 5 \times 1$

Factors of $10 = 2 \times 5$

L.C.M. $= 2 \times 3 \times 5 = 30$

(q)

2	10
5	5
	1

2	12
2	6
3	3
	1

3	15
5	5
	1

Factors of $10 = 2 \times 5$

Factors of $12 = 2 \times 2 \times 3$

Factors of $15 = 3 \times 5$

L.C.M. $= 2 \times 2 \times 3 \times 5 = 60$

(r)

5	5
	1

2	8
2	4
2	2
	1

2	10
5	5
	1

Factors of $5 = 5 \times 1$

Factors of $8 = 2 \times 2 \times 2$

Factors of $10 = 2 \times 5$

L.C.M. $= 2 \times 2 \times 2 \times 5 = 40$

(s)

3	3
	1

2	6
3	3
	1

3	9
3	3
	1

Factor of $3 = 3 \times 1$

Factors of $6 = 2 \times 3$

Factors of $9 = 3 \times 3$

L.C.M. $= 2 \times 3 \times 3 = 18$

(t)

2 | 2
1

2 | 8
2 | 4
2 | 2
1

2 | 12
2 | 6
3 | 3
1

Factors of $2 = 2 \times 1$
Factors of $8 = 2 \times 2 \times 2$
Factors of $12 = 2 \times 2 \times 3$
L.C.M. $= 2 \times 2 \times 2 \times 3 = 24$

(u)

2 | 4
2 | 2
1

5 | 5
1

2 | 10
5 | 5
1

Factors of $4 = 2 \times 2$
Factors of $5 = 5 \times 1$
Factors of $10 = 2 \times 5$
L.C.M. $= 2 \times 2 \times 5 = 20$

(v)

2 | 2
1

5 | 5
1

2 | 10
5 | 5
1

Factors of $2 = 2 \times 1$
Factors of $5 = 5 \times 1$
Factors of $10 = 2 \times 5$
L.C.M. $= 2 \times 5 = 10$

(w)

3 | 3
1

2 | 6
3 | 3
1

2 | 18
3 | 9
3 | 3
1

Factors of $3 = 3 \times 1$
Factors of $6 = 2 \times 3$
Factors of $18 = 2 \times 3 \times 3$
L.C.M. $= 2 \times 3 \times 3 = 18$

(x)

2 | 4
2 | 2
1

2 | 8
2 | 4
2 | 2
1

2 | 16
2 | 8
2 | 4
2 | 2
1

Factors of $4 = 2 \times 2$
Factors of $8 = 2 \times 2 \times 2$
Factors of $16 = 2 \times 2 \times 2 \times 2$
L.C.M. $= 2 \times 2 \times 2 \times 2 = 16$

Exercise 8.5

1. (a) Yes, 91 is a multiple of 13 i.e $13 \times 7 = 91$
(b) No, 101 is not a multiple of 9
(c) Yes, 84 is a multiple of 7 i.e $7 \times 12 = 84$
(d) No, 155 is not a multiple of 15

2. (a)

2 | 4
2 | 2
1

2 | 12
2 | 6
3 | 3
1

L.C.M. of 4 and $12 = 2 \times 2 \times 3 = 12$

(b)

3 | 9
3 | 3
1

3 | 15
5 | 5
1

L.C.M. of 9 and $15 = 3 \times 3 \times 5 = 45$

(c)

5	5
	1

11	11
	1

L.C.M. of 5 and $11 = 5 \times 11 = 55$

(d)

11	11
	1

3	15
5	5
	1

L.C.M. of 11 and $55 = 3 \times 5 \times 11 = 165$

3. (a) Yes, 48 is a multiple of 3 i.e. $3 \times 16 = 48$

(b) Yes, 72 is a multiple of 6 i.e. $6 \times 12 = 72$

(c) Yes, 96 is a multiple of 6 i.e $6 \times 16 = 96$

(d) No, 38 is not a multiple of 4 because it does not comes in the table of 4.

(e) No, 76 is not a multiple of 8 because it does not comes in the table of 8.

(f) Yes, 100 is a multiple of 5 i.e $5 \times 20 = 100$

4. (a) False because 2 is not a multiple of 4.

(b) True because all the given numbers are the multiples of 3.

(c) False 1 is not a multiple of every number.

(d) False because 5 is not a multiple of 25.

5. (a)

2	8
2	4
2	2
	1

2	12
2	6
3	3
	1

L.C.M. of 8 and $12 = 2 \times 2 \times 2 \times 3 = 24$

(b)

3	9
3	3
	1

3	21
7	7
	1

L.C.M. of 9 and $21 = 3 \times 3 \times 7 = 63$

(c)

3	15
5	5
	1

2	20
2	10
5	5
	1

L.C.M. of 15 and $20 = 2 \times 2 \times 3 \times 5$
$= 60$

(d)

2	36
2	18
3	9
3	3
	1

2	60
2	30
3	15
5	5
	1

L.C.M. of 36 and $60 = 2 \times 2 \times 3 \times 3 \times 5$
$= 180$

(e)

2	16
2	8
2	4
2	2
	1

2	24
2	12
2	6
3	3
	1

L.C.M. of 16 and 24 = 2 × 2 × 2 × 2 × 3 = 48

(f)

2	12
2	6
3	3
	1

2	40
2	20
2	10
5	5
	1

L.C.M. of 12 and 40 = 2 × 2 × 2 × 3 × 5 = 120

(g)

2	20
2	10
5	5
	1

3	45
3	15
5	5
	1

L.C.M. of 20 and 45 = 2 × 2 × 3 × 3 × 5 = 180

(h)

19	19
	1

3	57
19	19
	1

L.C.M. of 19 and 57 = 3 × 19 = 57

(i)

2	12
2	6
3	3
	1

3	15
5	5
	1

2	40
2	20
2	10
5	5
	1

L.C.M. of 12, 15 and 40 = 2 × 2 × 2 × 3 × 5 = 120

(j)

2	8
2	4
2	2
	1

2	10
5	5
	1

2	12
2	6
3	3
	1

L.C.M. of 8, 10 and 12 = 2 × 2 × 2 × 3 × 5 = 120

(k)

3	21
7	7
	1

7	49
7	7
	1

2	52
2	26
13	13
	1

L.C.M. of 21, 49 and 52 = 2 × 2 × 3 × 7 × 7 × 13 = 7644

(l)

5	25
5	5
	1

5	35
7	7
	1

3	45
3	15
5	5
	5
	1

L.C.M. of 25, 35 and $45 = 3 \times 3 \times 5 \times 5 \times 7 = 1575$

6. (a)

3	21
7	7
	1

7	49
7	7
	1

H.C.F. of 21 and 49 = 7

(b)

17	17
	1

3	27
3	9
3	3
	1

H.C.F. of 17 and 27 = 1

(c)

2	52
2	26
13	13
	1

5	65
13	13
	1

H.C.F. of 52 and 65 = 13

(d)

2	44
2	22
11	11
	1

2	84
2	42
3	21
7	7
	1

H.C.F. of 44 and $84 = 2 \times 2 = 4$

(e)

2	24
2	12
2	6
3	3
	1

2	36
2	18
3	9
3	3
	1

H.C.F. of 24 and $36 = 2 \times 2 \times 3 = 12$

(f)

2	42
3	21
7	7
	1

2	54
3	27
3	9
3	3
	1

H.C.F. of 42 and $54 = 2 \times 3 = 6$

(g)

2	80
2	40
2	20
2	10
5	5
	1

2	128
2	64
2	32
2	16
2	8
2	4
2	2
	1

H.C.F. of 80 and $128 = 2 \times 2 \times 2 \times 2 = 16$

(h)

2	60
2	30
3	15
5	5
	1

2	180
3	75
5	25
5	5
	1

H.C.F. of 60 and $150 = 2 \times 3 \times 5 = 30$

❑

9. Money

Exercise 9.1

1. (a) ₹ 0.35 (b) ₹ 0.78 (c) ₹ 7.08 (d) ₹ 3.80
(e) ₹ 750. 65 (f) ₹ 18.60 (g) ₹ 207.08 (h) ₹ 96.48

2. (a) Eight paise only
(b) Seventeen paise only
(c) Rupees two and thirty five paise
(d) Rupees four and fifty paise
(e) Rupees nine and seventy five paise
(f) Rupees thirty two and nine paise
(g) Rupees two hundred ninety five and seventy eight paise
(h) Rupees two thousand three hundred fifteen and ninety paise.

3. (a) ₹ $8.00 \times 100 = 800$ paise (b) ₹ $32 \times 100 = 3200$ paise
(c) ₹ $746 \times 100 = 74600$ (d) ₹ $12.78 \times 100 = 1278$ paise
(e) ₹ $39.38 \times 100 = 3938$ paise (f) ₹ $94.70 \times 100 = 9470$ paise
(g) ₹ $2316.72 \times 100 = 231672$ paise
(h) ₹ $5206.06 \times 100 = 520606$ paise

4. (a) 9 paise $\div 100 =$ ₹ 0.09 (b) 30 paise $\div 100 =$ ₹ 0.30

(c) 47 paise ÷100 = ₹ 0.47 (d) 5248 paise ÷100 = ₹ 52.48
(e) 764 paise ÷100 = ₹ 7.64 (f) 1528 paise ÷100 = ₹ 15.28
(g) 8863 paise ÷100 = ₹ 88.63 (h) 2469 paise ÷100 = ₹ 24.69

Exercise 9.2

1. (a) ₹ 450.08
+ ₹ 32.85
₹ 482.93

(b) ₹ 4018
+ ₹ 784
₹ 4802

(c) ₹ 888.85
+ ₹ 841.00
₹ 1729.85

(d) ₹ 501.70
– ₹ 352.45
₹ 149.25

(e) ₹ 253.65
+ ₹ 189.52
₹ 443.17

(f) ₹ 4232.60
– ₹ 3276.45
₹ 956.15

2. (a) ₹ 415.85
+ ₹ 99.35
₹ 515.20

(b) ₹ 388.67
+ ₹ 439.25
₹ 827.92

(c) ₹ 4872.07
+ ₹ 877.35
₹ 5749.42

(d) ₹ 669.79
+ ₹ 2389.70
₹ 3059.49

3. (a) ₹ 347.25
– ₹ 195.40
₹ 151.85

(b) ₹ 999.35
– ₹ 439.76
₹ 559.59

(c) ₹ 627.85
– ₹ 609.95
₹ 17.90

(d) ₹ 5327.00
– ₹ 3275.63
₹ 2051.37

4. (a)

₹	p
3	40
+ 6	26
9	66

(b)

₹	p
99	35
+ 21	20
120	55

(c)

₹	p
84	73
+ 35	15
119	88

(d)

₹	p
8	23
– 5	05
3	18

(e)

₹	p
85	26
– 53	30
31	96

(f)

₹	p
722	45
– 39	28
683	17

(g)

₹	p
2	24
× 5	
11	20

(h)

₹	p
15	30
× 4	
61	20

(i)

₹	p
12	39
× 7	
86	73

5. ₹ 1308.00
+ ₹ 1935.75
₹ 3243.75

6. ₹ 3236.35
₹ 684.50
+ ₹ 29.85
3950.70

7. ₹ 1258.89
– ₹ 892.95
₹ 365.94

8. ₹ 2576.25 + ₹ 825.90 = ₹ 3402.15

₹ 3402.15 − ₹ 2896.75 = ₹ 505.40 **Answer**

9. ₹ 3475.00 + ₹ 8649.25 = ₹ 12124.25

₹ 12124.25 − ₹ 2899.76 = ₹ 9224.49 **Answer**

10. ₹ 844.69 + ₹ 3757.50 = ₹ 4602.19

₹ 6696.70 − ₹ 4602.19 = ₹ 2094.51

11. ₹ 9365.85 + ₹ 2469.75 = ₹ 11835.60 **Answer**

₹ 1985.20 + ₹ 267.90 = ₹ 2253.10

Exercise 9.3

1. (b) $8 \times$ ₹ 72.45 = ₹ 579.60 (c) $12 \times$ ₹ 36.25 = ₹ 435.00

(d) $15 \times$ ₹ 43.40 = ₹ 651.00 (e) $18 \times$ ₹ 25.25 = ₹ 454.50

2. (b) ₹ 321.60 ÷ 6 = ₹ 53.60 (c) ₹ 258 ÷ 8 = ₹ 32.25

(d) ₹ 417 ÷ 5 = ₹ 83.40 (e) ₹ 4965.30 ÷ 9 = ₹ 551.70

3. (a) ₹ 28.45 × 5 = ₹ 142.25 (b) ₹ 39.95 × 7 = ₹ 279.65 (c) ₹ 85.26 × 2 = ₹ 170.52

(d) ₹ 304.25 × 6 = ₹ 1825.50 (e) ₹ 285.42 × 3 = ₹ 856.26 (f) ₹ 903.06 × 8 = ₹ 7224.48

(g) ₹ 240.80 × 5 = ₹ 1204.00 (h) ₹ 297.13 × 4 = ₹ 1188.52 (i) ₹ 2038.48 × 6 = ₹ 12230.88

4. (a)
```
7) 177.10 (25.30
  −14
   37
  −35
    21
   −21
     0
```

(b)
```
4) 93.08 (23.27
  −8
   13
  −12
    10
   −8
    28
   −28
     0
```

(c) 6) 206.16 (34.36
-18
26
-24
21
-18
36
-36
0

(d) 9) 415.44 (6.16
-36
55
-54
14
-9
54
-54
0

(e) 7) 652.61 (93.23
-63
22
-21
16
-14
21
-21
0

(f) 4) 1284.52 (321.13
-12
8
-8
4
-4
5
-4
12
-12
0

(g) 2) 2428.70 (1214.35
-2
4
-4
2
-2
8
-8
7
-6
10
-10
0

(h) 2) 3739.38 (1869.69
-2
17
-16
13
-12
19
-18
13
-12
18
-18
0

(i) 8) 418.96 (52.37
-40
18
-16
29
-24
56
-56
0

5. (a) ₹ 67.25 × 12 = 13450 + 6725× = 807.00

(b) ₹ 79.48 × 24 = 31792 + ₹ 15896× = ₹ 1907.52

(c) ₹ 19.85 × 14 = 7940 + 1985× = ₹ 277.90

(d) ₹ 72.66 × 15 = 36330 + 7266× = ₹ 1089.90

(e) ₹ 817.96 × 16 = 490776 + 81796× = ₹ 13087.36

(f) ₹ 287.40 × 32 = 57480 + 86220× = ₹ 9196.80

6. (a) 5) 678.25 (135.65
−5
17
−15
28
−25
32
−30
25
−25
0 ₹ 135.65

(b) 3) 958.44 (319.48
−9
5
−3
28
−27
14
−12
24
−24
0 ₹ 319.48

(c) 2) 908.94 (454.47
−8
10
−10
8
−8
9
−8
14
−14
0 ₹ 454.47

(d) 7) 7128.38 (1018.34
−7
12
−7
58
−56
23
−21
28
−28
0 ₹ 1018.34

(e) 4) 5223.96 (1305.99
−4
12
−12
23
−20
39
−36
36
36
0 = ₹ 1305.99

(f) 5) 394.20 (78.84
−35
44
−40
42
−40
20
−20
0 = ₹ 78.84

(g) 3) 8260.44 (2753.48
−6
22
−21
16
15
10
−9
14
−12
24
−24
0
= ₹ 2753.48

(h) 6) 2264.70 (377.45
−18
46
−42
44
−42
27
−24
30
−30
0
= ₹ 377.45

(i) 12) 3888.24 (324.02
−36
28
−24
48
−48
24
−24
0 = ₹ 324.02

Word Problems

1. Manoj baught pastries for = ₹ 450.50
Manoj baught cookies for = ₹ + 179.35
Total money spend by him = ₹ 629.85

2. Soni's total earn in a month = ₹ 35,825.50
She spends = ₹ − 27889.75
Her monthly savings = ₹ 7935.75

3. Mrs. Gupta bought rice for = ₹ 537.50
She bought tea for = ₹ 128.47
She bought Sugar for ₹ + 234.72
Total money spend by her = ₹ 900.69

4. This year price of bicycle = ₹ 2975.80
Last year price of bicycle = ₹ − 2560.50
rise in price of bicycle = ₹ 415.30

5. Govind bought a T.V. set for = ₹ 40,873.75
He bought a washing machine for = ₹ 20,895.50
He bought a refrigerator for = ₹ + 38,920.85
Total money spend by him = ₹ 1,00,690.10

6. Cost of a toy = ₹ 362.45
Cost of 6 toys = ₹ 362.45 × 6
= ₹ 2174.70

7. Total income of a man in one week = ₹ 6384.70
Income earn in one day = ₹ 6384. 70 ÷ 7
= ₹ 912.10

8. Cost of 18 identical things = ₹ 2207.68
Cost of 1 identical thing = ₹ 2207.68 ÷ 18
= ₹ 122.64

9. Total Money Ateek has = ₹ 247.98
Mona has four times money as Ateek = ₹ 4 × ₹ 247.98
= ₹ 991.92

10. Each cake cost = ₹ 225.70
Cost of 6 cakes = 6 × 225.70
= ₹ 1354.20

11. Meeta buys 3 pens = ₹ 66.50
Meeta buys 2 notebooks = ₹ 70.50
Meeta buys a eraser = ₹ + 3.05
Total cost = ₹ 140.05

Amount paid by Meeta to shopkeeper = ₹ 150.00
Total cost of all things = ₹ – 140.05
Amount return by shopkeeper = ₹ 9.95

12. Cost of 8 pizzas = ₹ 1882.00
Cost of 1 pizza = ₹ 1882 ÷ 8 = ₹ 235.25

13. (i) Cost of 7 pen = ₹ 180.25
Cost of 1 pen = ₹ 180.25 ÷ 7
= ₹ 25.75

(ii) Cost of 4 note books = ₹ 182.08
Cost of 1 notebook = ₹ 182.08 ÷ 4
= ₹ 45.52

(iii) Cost of 1 pen = ₹ 45.52
Cost of 1 notebook = ₹ 25.75
Total cost of pen and notebook = ₹ 71.27

❑

10. Unitary Method

1. Cost of one article = ₹ 78
Cost of 15 articles = $15 \times 78 =$ ₹ 1170

2. Cost of one kg of apples = ₹ 120
Cost of 7 kg of apples = $7 \times 120 =$ ₹ 840

3. Seven fancy glasses of same type cost = ₹ 1680
Cost of one fancy glass of same type = $1680 \div 7$
= ₹ 240

4. Cost of fifteen pen = ₹ 345
∴ Cost of one pen = $345 \div 15$
= ₹ 23

5. Cost of one pencils = ₹ 3.50
Cost of 24 such pencils = 3.50×24
= ₹ 84

6. Weight of 4 chairs = 184 kg
Weight of 1 chair = $184 \div 4$
= 46 kg

7. (a) Total weight of 12 articles of same kind = 162 kg
Cost of one article = $162 \div 12 = 13.5$ kg
(b) Cost of 15 such articles = $13.5 \times 15 = 202.5$ kg

8. (a) Cost of light notebooks of same number = ₹ 412
Cost of one note-books = $412 \div 8 =$ ₹ 51.5
(b) Cost of twelve note-books = $51.5 \times 12 =$ ₹ 618

❑

11. Fractions

Exercise 11.1

1. (a) $\frac{3}{8}$ (b) $\frac{6}{12}$ (c) $\frac{4}{9}$

2. (a) (i) $\frac{1}{3}$ (ii) $\frac{2}{6} = \frac{1}{3}$ (iii) $\frac{3}{8}$ Hence No, all are not equivalent

(b) (i) $\frac{1}{2}$ (ii) $\frac{2}{4} = \frac{1}{2}$ (iii) $\frac{4}{8} = \frac{1}{2}$ Hence Yes, all are equivalent

3. (a) $\frac{1}{2} = \frac{4}{8}$ (b) $\frac{1}{2} = \frac{2}{4}$ (c) $\frac{1}{4} = \frac{2}{8}$ (d) $\frac{4}{10} = \frac{2}{5}$

4. (a) $\frac{3}{5}$ (b) $\frac{1}{3}$ (c) $\frac{3}{8}$ (d) $\frac{7}{12}$

(e) $\frac{1}{4}$ (f) $\frac{2}{6}=\frac{1}{3}$ (g) $\frac{3}{4}$ (h) $\frac{2}{4}=\frac{1}{2}$

5. Do it yourself **6.** Do it yourself **7.** Do it yourself

Exercise 11.2

1. (a) $\frac{1}{2}\times 64=1\times 32=32$ (b) $\frac{1}{3}\times 51=1\times 117=17$

(c) $\frac{1}{4}\times 96=1\times 24=24$

2. (a) $\frac{5}{6}\times 24=5\times 4=20$ (b) $\frac{7}{10}\times 60=7\times 6=42$

(c) $\frac{6}{11}\times 77=6\times 7=42$ (d) $\frac{7}{15}\times 45=7\times 3=21$

3. (a) $\frac{2}{3}\times 18=2\times 18=36$ (b) $\frac{2}{5}\times 40=2\times 8=16$

(c) $\frac{5}{6}\times 96=5\times 16=80$ (d) $\frac{3}{4}\times 64=3\times 16=48$

(e) $\frac{3}{7}\times 112=3\times 16=48$ (f) $\frac{2}{9}\times 126=2\times 14=28$

(g) $\frac{3}{4}\times 132=3\times 33=99$ (h) $\frac{5}{8}\times 384=5\times 48=240$

4. (a) $\frac{3}{4}\times 20=3\times 5=15$ (b) $\frac{7}{15}\times 60=7\times 4=28$

(c) $\frac{8}{9}\times 72=8\times 8=64$ (d) $\frac{3}{14}\times 56=3\times 4=12$

Exercise 11.3

1. $\frac{4}{13}, \frac{3}{23}, \frac{5}{8}, \frac{7}{15}$ are proper fractions

2. $\frac{18}{5}, \frac{13}{5}, \frac{8}{7}, \frac{11}{8}, \frac{17}{15}$ are improper fractions

3. (a) $\frac{1}{7}, \frac{4}{7}, \frac{5}{7}$ (b) $\frac{3}{8}, \frac{7}{8}$ (c) $\frac{5}{12}, \frac{11}{12}$ (d) $\frac{1}{5}, \frac{4}{5}$

4. $\frac{12}{7}$ and $\frac{12}{5}, \frac{13}{12}$ and $\frac{13}{2}$ are unlike fractions

5. $\frac{1}{5}, \frac{1}{12}$ and $\frac{1}{18}$ are unit fractions

Exercise 11.4

1. (a) $\frac{2\times 2}{3\times 2}=\frac{4}{6}, \frac{2\times 3}{3\times 3}=\frac{6}{9}$ (b) $\frac{3\times 2}{4\times 2}=\frac{6}{8}, \frac{3\times 3}{4\times 3}=\frac{9}{12}$

(c) $\frac{4\times 2}{7\times 2}=\frac{8}{14}, \frac{4\times 3}{7\times 3}=\frac{12}{21}$ (d) $\frac{5\times 2}{9\times 2}=\frac{10}{18}, \frac{5\times 3}{9\times 3}=\frac{15}{27}$

2. (a) $\frac{2\times 2}{5\times 2}=\frac{4}{10}, \frac{2\times 3}{5\times 3}=\frac{6}{15}, \frac{2\times 4}{5\times 4}=\frac{8}{20}, \frac{2\times 5}{5\times 5}=\frac{10}{25}$

(b) $\frac{3\times 2}{7\times 2}=\frac{6}{14}, \frac{3\times 3}{7\times 3}=\frac{9}{21}, \frac{3\times 4}{7\times 4}=\frac{12}{28}, \frac{3\times 5}{7\times 5}=\frac{15}{35}$

(c) $\frac{5\times 2}{8\times 2}=\frac{10}{16}, \frac{5\times 3}{8\times 3}=\frac{15}{24}, \frac{5\times 4}{8\times 4}=\frac{20}{32}, \frac{5\times 5}{8\times 5}=\frac{25}{40}$

(d) $\frac{3\times 2}{10\times 2}=\frac{6}{20}, \frac{3\times 3}{10\times 3}=\frac{9}{30}, \frac{3\times 4}{10\times 4}=\frac{12}{40}, \frac{3\times 5}{10\times 5}=\frac{15}{50}$

3. (a) $\frac{4\times 5}{5\times 5}=\frac{20}{25}$ (b) $\frac{4\times 4}{5\times 4}=\frac{16}{20}$ (c) $\frac{4\times 8}{5\times 8}=\frac{32}{40}$

4. (a) $\frac{2\times 8}{5\times 8}=\frac{16}{40}$ (b) $\frac{3\times 4}{10\times 4}=\frac{12}{40}$ (c) $\frac{1\times 10}{4\times 10}=\frac{10}{40}$

(d) $\frac{5\times 20}{2\times 20}=\frac{100}{40}$ (e) $\frac{7\times 5}{8\times 5}=\frac{35}{40}$ (f) $\frac{11\times 2}{20\times 2}=\frac{22}{40}$

5. (a) $\frac{2}{7}, \frac{4}{7}$ (b) $\frac{3}{11}, \frac{4}{11}$ (c) $\frac{7}{12}, \frac{11}{12}$

(d) $\frac{10}{13}, \frac{11}{13}$ (e) $\frac{4}{17}, \frac{5}{17}$ (f) $\frac{8}{15}, \frac{11}{15}$

6. Proper fractions : $\frac{6}{17}, \frac{9}{11}, \frac{6}{8}, \frac{7}{10}$

Improper fractions : $\frac{8}{5}, \frac{14}{3}, \frac{21}{4}, \frac{9}{4}$

Mixed fractions : $5\frac{1}{5}, 6\frac{2}{9}, 1\frac{2}{3}, 11\frac{1}{3}$

7. (a) $2\frac{3}{5}=\frac{5\times 2+3}{5}=\frac{13}{5}$ (b) $5\frac{3}{8}=\frac{8\times 5+3}{8}=\frac{43}{8}$

(c) $7\frac{1}{4}=\frac{4\times 7+1}{4}=\frac{29}{4}$ (d) $6\frac{4}{9}=\frac{9\times 6+4}{9}=\frac{58}{9}$

8. (a) $\frac{5\times 3+3}{5}=\frac{18}{5}$ (b) $\frac{7\times 4+1}{7}=\frac{29}{7}$

(c) $\frac{5\times 6+4}{5}=\frac{34}{5}$ (d) $\frac{9\times 5+2}{9}=\frac{47}{9}$

(e) $\frac{7\times 8+3}{7}=\frac{59}{7}$ (f) $\frac{12\times 8+7}{12}=\frac{103}{12}$

9. (a) 3) 23 (7
$\underline{-21}$
2

$= 7\frac{2}{3}$

(b) 7) 18 (2
$\underline{-14}$
4

$= 2\frac{4}{7}$

(c) 3) 25 (8
$\underline{-24}$
1

$= 8\frac{1}{3}$

10. (a) 4) 25 (6
$\underline{-24}$
1

$= \frac{1}{4}$

(b) 3) 22 (7
$\underline{-21}$
1

$= 7\frac{1}{3}$

(c) 9) 39 (4
$\underline{-36}$
3

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

(d) 6) 31 (5
$\underline{-30}$
1

$= 5\frac{1}{6}$

(e) 12) 55 (4
$\underline{-48}$
7

$= 4\frac{7}{12}$

Exercise 11.5

1. (a) $\frac{3+1}{5} = \frac{4}{5}$

(b) $\frac{5+4}{9} = \frac{9}{9} = 1$

(c) $\frac{4}{7} + \frac{0}{7} = \frac{4}{7}$

(d) $\frac{2+1}{5} = \frac{3}{5}$

(e) $\frac{4+5}{11} = \frac{9}{11}$

(f) $\frac{8+3}{13} = \frac{11}{13}$

(g) $\frac{2+10}{15} = \frac{12}{15} = \frac{4}{5}$

(h) $\frac{9+4}{17} = \frac{13}{17}$

(i) $\frac{9}{4} + \frac{21}{4} = \frac{30}{4} = \frac{15}{2}$

(j) $\frac{17}{2} + \frac{21}{2} = \frac{38}{2} = 19$

(k) $\frac{31}{7} + \frac{43}{7} = \frac{74}{7}$

(l) $\frac{17}{5} + \frac{41}{5} = \frac{58}{5}$

2. (a) $\frac{14+1}{17} = \frac{15}{17}$

(b) $\frac{12-8}{13} = \frac{4}{13}$

(c) $\frac{5-5}{4} = \frac{0}{4} = 0$

(d) $\frac{37}{4} + \frac{47}{4} = \frac{84}{4} = 21$

3. (a) $\frac{9-2}{11} = \frac{7}{11}$

(b) $\frac{16-4}{15} = \frac{12}{15} = \frac{4}{5}$

(c) $\frac{12-8}{17} = \frac{4}{17}$

(d) $\frac{13-9}{4} = \frac{4}{4} = 1$

(e) $\frac{16-13}{25} = \frac{3}{25}$

(f) $\frac{14-1}{15} = \frac{13}{15}$

(g) $\frac{18-15}{21}=\frac{3}{21}=\frac{1}{7}$ (h) $\frac{19-16}{31}=\frac{3}{31}$

(i) $\frac{13}{4}-\frac{9}{4}=\frac{4}{4}=1$ (j) $\frac{7}{3}-\frac{5}{3}=\frac{2}{3}$

(k) $\frac{17}{5}-\frac{11}{5}=\frac{6}{5}$ (l) $\frac{19}{4}-\frac{11}{4}=\frac{8}{4}=2$

4. (a) $\frac{8}{10}=\frac{8\div 2}{10\div 2}=\frac{4}{5}$ (b) $\frac{3}{9}=\frac{3\div 3}{9\div 3}=\frac{1}{3}$

(c) $\frac{12}{60}=\frac{12\div 12}{60\div 12}=\frac{1}{5}$ (d) $\frac{36}{54}=\frac{36\div 18}{54\div 18}=\frac{2}{3}$

5. (a) $\frac{6}{12}=\frac{6\div 6}{12\div 6}=\frac{1}{2}$ (b) $\frac{9}{36}=\frac{9\div 9}{36\div 9}=\frac{1}{4}$

(c) $\frac{7}{35}=\frac{7\div 7}{35\div 7}=\frac{1}{5}$ (d) $\frac{9}{45}=\frac{9\div 9}{45\div 9}=\frac{1}{5}$

Word Problems

1. Total number of pencils $= 24$

Number of pencils sharp $= \frac{1}{6}\times 24 = 1\times 4 = 4$

Number of pencils not sharp $= 24-4=20$

2. Total number of pizza slices John had $= 8$

Slices of pizza he gave to Annu $= = \frac{1}{2}\times 8 = 4$

Slices of pizza he give to Ruby $= \frac{1}{4}\times 8 = 2$

Slices left with John $= 8-(4+2)=2$

3. Fraction of ribbon used to decorate one box $= \frac{1}{4}$

Fraction of ribbon used to decorate other box $= \frac{1}{8}$

Total fraction used to decorate both boxes $= \frac{1}{4}+\frac{1}{8}$ L.C.M. is 8

$= \frac{2}{8}+\frac{1}{8}=\frac{3}{8}$

4. Total number of toffees mother have $= 96$

Toffees given to Avik $= \frac{3}{8}\times 96 = 36$

Toffees given to Mehar $= \frac{1}{8}\times 96 = 12$

Avik eaten more toffees than Mehar $= 36-12=24$

5. Fraction of homework Mahesh completed $= \frac{3}{4}$

Fraction of work left $= 1 - \frac{3}{4}$ L.C.M $= 4$

$= \frac{4-3}{4} = \frac{1}{4}$

6. Fraction of kilometer Anju walked before lunch $= \frac{4}{5}$

Fraction of Kilometer Anju walked after lunch $= \frac{6}{5}$

Total fraction of kilometer Anju walked $= \frac{4}{5} + \frac{6}{5} = \frac{10}{5} = 2\,\text{km}$

❑

12. Decimals

Exercise 12.1

1. (a) Zero point eight (b) Zero point four
(c) Three point two (d) Five point eight

2. (a) 0.7, 0.8, 0.9, 1.0 (b) 3.4, 3.5, 3.6, 3.7
(c) 9.2, 9.3, 9.4, 9.5 (d) 29.9, 30.0, 30.1, 30.2

Exercise 12.2

1. (b)

	Ones	Tenths	Hundredths	Decimals
(a)	0		25	0.25
(d)	2		04	2.04
(e)	9		80	9.80

2. (a) Zero point zero seven (b) Zero point one two
(c) Three point zero five (d) Four point two seven

3. (a) 0.85, 0.86, 0.87 (b) 0.13, 0.14, 0.15
(c) 1.42, 1.43, 1.44 (d) 2.99, 3.00, 3.01

Exercise 12.3

1. (a) $\frac{3}{10} = 0.3$ (b) $\frac{23}{10} = 2.3$ (c) $\frac{23}{100} = 0.23$

(d) $\frac{727}{100} = 7.27$ (e) $2\frac{53}{100} = 2.53$ (f) $\frac{9}{100} = 0.09$

(g) $24\frac{53}{100} = 24.53$ (h) $\frac{503}{10} = 50.3$ (i) $\frac{37}{10} = 3.7$

(j) $\frac{39}{10} = 3.9$ (k) $\frac{611}{100} = 6.11$ (l) $\frac{209}{100} = 2.09$

2. (a) $0.9 = \frac{9}{10}$ (b) $0.03 = \frac{3}{100}$ (c) $0.13 = \frac{13}{100}$

(d) $1.33 = \frac{133}{100}$ (e) $6.7 = \frac{67}{10}$ (f) $7.9 = \frac{79}{10}$

(g) $14.53 = \frac{1453}{100}$ (h) $35.01 = \frac{3501}{100}$

3. (a) 2.08 (b) $\frac{53}{10} = 5.3$ (c) 6.1

(d) $\frac{703}{100} = 7.03$ (e) 18.23 (f) $\frac{223}{100} = 2.23$

4. (a) 8.6, 8.7, 8.8 (b) 20.1, 20.2, 20.3 (c) 6.05, 6.06, 6.07

(d) 12.98, 12.99, 13.00

❑

13. Percentage

1. (a) 9% (b) 70% (c) 29% (d) 43%

2. (a) $\frac{17}{10} \times 100 = 170\%$ (b) $\frac{18}{25} \times 100 = 72\%$

(c) $\frac{3}{5} \times 100 = 60\%$ (d) $\frac{35}{50} \times 100 = 70\%$

(e) $\frac{9}{20} \times 100 = 45\%$

3. (a) $\frac{18}{25} \times 100 = 72\%$ (b) $\frac{9}{20} \times 100 = 5\%$

(c) $\frac{3}{10} \times 100 = 30\%$ (d) $\frac{43}{50} \times 100 = 86\%$

4. (a) $\frac{7}{2} \times 100 = 350\%$ (b) $\frac{35}{8} \times 100 = \frac{35 \times 25}{2} = 437.5\%$

(c) $\frac{7}{5} \times 100 = 140\%$ (d) $\frac{5}{2} \times 100 = 250\%$

5. (a) $1.8 \times 100 = 180\%$ (b) $2.75 \times 100 = 275\%$

(c) $0.80 \times 100 = 80\%$ (d) $0.45 \times 100 = 45\%$

Exercise 13.2

1. (a) $-$ v (b) $-$ iv (c) $-$ vi
(d) (i) (e) (ii) (f) (iii)

2. (a) $\frac{25}{100}=\frac{1}{4}$ (b) $\frac{35}{100}=\frac{7}{20}$
(c) $\frac{90}{100}=\frac{9}{10}$ (d) $\frac{4}{5\times 100}=\frac{4}{500}=\frac{1}{125}$
(e) $\frac{5}{100}=\frac{1}{20}$ (f) $\frac{27}{10\times 100}=\frac{27}{1000}$
(g) $\frac{7}{4\times 100}=\frac{7}{400}$ (h) $\frac{5}{2\times 100}=\frac{5}{200}=\frac{1}{40}$

3. (a) $\frac{45}{100}=\frac{9}{20}$ (b) $\frac{180}{100}=\frac{9}{5}$
(c) $\frac{12}{5\times 100}=\frac{12}{500}=\frac{3}{125}$

4. (a) $\frac{20}{100}=\frac{1}{5}$ (b) $\frac{35}{100}=\frac{7}{20}$
(c) $\frac{25}{100}=\frac{1}{4}$ (d) $\frac{65}{100}=\frac{13}{20}$
(e) $\frac{78}{100}=\frac{39}{50}$ (f) $\frac{25}{4}\%=\frac{25}{400}=\frac{1}{16}$
(g) $\frac{4}{5\times 100}=\frac{4}{500}=\frac{1}{125}$ (h) $\frac{11}{4}\%=\frac{11}{4\times 100}=\frac{11}{400}$
(i) $\frac{125}{100}=\frac{5}{4}$ (j) $\frac{150}{100}=\frac{3}{2}$
(k) $\frac{50}{100}=\frac{1}{2}$ (l) $\frac{75}{100}=\frac{3}{4}$
(m) $\frac{40}{100}=\frac{2}{5}$ (n) $\frac{84}{100}=\frac{21}{25}$
(o) $\frac{67}{100}$

5. (a) $\frac{32}{100}=\frac{8}{25}$ (b) $\frac{86}{100}=\frac{43}{50}$
(c) $\frac{65}{100}=\frac{13}{20}$ (d) $\frac{96}{100}=\frac{24}{25}$
(e) $\frac{125}{100}=\frac{5}{4}$ (f) $\frac{8}{100}=\frac{2}{25}$

6. (a) $\frac{1}{2} \times 100 = 50\%$ (b) $\frac{5}{2} \times 100 = 250\%$

(c) $\frac{3}{4} \times 100 = 75\%$ (d) $\frac{4}{5} \times 100 = 80\%$

(e) $\frac{15}{4} \times 100 = 375\%$ (f) $\frac{18}{25} \times 100 = 72\%$

(g) $\frac{11}{5} \times 100 = 220\%$ (h) $\frac{29}{4} \times 100 = 725\%$

(i) $\frac{33}{10} \times 100 = 330\%$ (j) $\frac{29}{25} \times 100 = 116\%$

(k) $\frac{23}{20} \times 100 = 115\%$ (l) $\frac{103}{20} \times 100 = 515\%$

(m) $\frac{29}{4} \times 100 = 725\%$ (n) $\frac{103}{25} \times 100 = 412\%$

7. (a) $0.16 \times 100 = 16\%$ (b) $0.47 \times 100 = 47\%$

(c) $0.07 \times 100 = 7\%$ (d) $12.8 \times 100 = 1280\%$

(e) $0.002 \times 100 = 0.2\%$ (f) $1.3 \times 100 = 130\%$

(g) $2.7 \times 100 = 270\%$ (h) $2.25 \times 100 = 225\%$

(i) $1.08 \times 100 = 108\%$ (j) $97.3 \times 100 = 9730\%$

(k) $0.029 \times 100 = 2.9\%$ (l) $0.884 \times 100 = 88.4\%$

(m) $0.595 \times 100 = 59.5\%$ (n) $0.207 \times 100 = 20.7\%$

(o) $325.35 \times 100 = 32535\%$

8. (a) $\frac{3}{4} \times 100 = 75\%$ (b) $\frac{3}{5} \times 100 = 60\%$

(c) $0.26 \times 100 = 26\%$ (d) $0.74 \times 100 = 74\%$

(e) $3.8 \times 100 = 380\%$ (f) $4.67 \times 100 = 467\%$

9. (a) $\frac{3}{100} = 0.03$ (b) $\frac{28}{100} = 0.28$ (c) $\frac{33}{100} = 0.33$

(d) $\frac{79}{100} = 0.79$ (e) $\frac{46}{100} = 0.46$ (f) $\frac{83}{100} = 0.83$

(g) $\frac{925}{100} = 9.25$ (h) $\frac{392}{100} = 3.92$ (i) $\frac{67.32}{100} = 0.6732$

(j) $\frac{0.87}{100} = 0.0087$ (k) $\frac{37.5}{100} = 0.375$ (l) $\frac{0.78}{100} = 0.0078$

(m) $\frac{32.75}{100} = 0.3275$ (n) $\frac{0.65}{100} = 0.0065$ (o) $\frac{348.8}{100} = 3.488$

10. (a) $\frac{46}{100} = 0.46$ (b) $\frac{83}{100} = 0.83$ (c) $\frac{278}{100} = 2.78$

(d) $\frac{11}{100} = 0.11$ (e) $\frac{38}{100} = 0.38$ (f) $\frac{275}{100} = 2.75$

11. (a) $\frac{37}{100} \times 85 = \frac{629}{20} = 31.45, \frac{85}{100} \times 40 = 34$

Hence 85% of 40 is greater

(b) $\frac{10}{100} \times 500 = 50, \frac{20}{100} \times 300 = 60$

Hence 20% of 300 is greater

12. (a) $\frac{20}{100} \times 95 = 19$ (b) $\frac{50}{100} \times 200 = 100$ (c) $\frac{8}{100} \times 150 = 12$

(d) $\frac{75}{100} \times 40 = 30$ (e) $\frac{82}{100} \times 225 = 184.5$ (f) $\frac{2.5}{100} \times 10 = \frac{2.5}{10} = 0.25$

(g) $\frac{16.6}{100} \times 250 = 41.5$ (h) $\frac{70}{100} \times 80 = 56$ (i) $\frac{60}{100} \times 35 = 21$

(j) $\frac{50}{100} \times 250 = ₹125$ (k) $\frac{75}{100} \times 4 = 3\,\text{kg}$

(l) $\frac{22}{100} \times 400 = 88\,\text{m}$ (m) $\frac{0.07 \times 1000}{100} = ₹0.7\,\text{m}$

(n) $\frac{10}{100} \times 5 = 0.5\,\text{dozen}$ (o) $\frac{50}{100} \times 350.50 = ₹175.25$

(p) $\frac{30}{100} \times 300 = ₹90\,\text{dozen}$ (q) $\frac{40}{100} \times 3.200 = 1\text{ kg }280\text{ gm}$

(r) $\frac{45}{100} \times 60 = 27\,\text{m}$ (s) $\frac{25}{100} \times 48 = 12\text{ kg}$

(t) $\frac{25}{100} \times 3.20 = 80\,\text{cm}$

13. (a) $\frac{50}{100} \times 30 = 15$ (b) $\frac{25}{100} \times 48 = 12$ (c) $\frac{25}{100} \times 60 = 15$

(d) $\frac{25}{100} \times 220 = 55$ (e) $\frac{10}{100} \times 200 = 20$ (f) $\frac{20}{100} \times 400 = 80$

14. (a) $\frac{15}{100} \times 100 = 15\,\text{paise}$ (b) $\frac{30}{100} \times 10 = ₹\,3$

(c) $\frac{25}{100} \times 8 = 2\,\text{km}$ (d) $\frac{20}{100} \times 1000 = 200\,\text{mL}$

(e) $\frac{70}{100} \times 850 = ₹\,595$ (f) $\frac{45}{100} \times 140 = 63\,\text{kg}$

Word Problems

1. Per month Salary of Mr. Goel $= ₹\ 12{,}000$

He spends salary on the education $= 32\%$ of $12{,}000$

Then, rotal salary spend $= \frac{32}{100} \times 12{,}000 = ₹\ 3840$

2. Weight of Rohit $= 65$ kg

Weight of Rahul $= 20\%$ more than Rohit

$= \frac{20}{100} \times 65$

Hence weight of Rahul $= 65 + 13 = 78$ kg

3. Total distance between house and school $= 25$ km

Distance covered by shalini $= 60\%$ of 25

$= \frac{60}{100} \times 25 = 15$ km

4. Total pages of book $= 600$

Number of pages read $= 150$

Percentage of book read $= \frac{150}{600} \times 100 = 25\%$

5. Anu goes to market with $= ₹\ 750$

Percentage of money spend in market $= 72\%$

Total money spend $= \frac{72}{100} \times 750 = ₹\ 540$

Money left $= 750 - 540 = ₹\ 210$

6. (a) Total number of students in examination $= 3600$

Percentage of students passed $= 75\%$

Total number of students passed $= \frac{75}{100} \times 3600 = 2700$

(b) Number of students faced $= 3600 - 2700$

$= 900$

7. (a) Total number of students in a school $= 2500$

Percentage of boys in a school $= 47\%$

Number of boys in a school $= \frac{47}{100} \times 2500 = 1175$

(b) Number of girls in a school $= 2500 - 1175$

$= 1325$

8. Total petrol in Kapil's car $= 12$ L

Percentage of petrol consumed $= 25\%$

$= \frac{25}{100} \times 12 = 3$ L

9. $\frac{35}{100} \times 240 = 7 \times 12 = ₹\,84, \frac{25}{100} \times 380 = 1 \times 95 = ₹\,95$

Hence 25% of 380 is greater by $95 - 84 = ₹\,11$

10. (a) Total number of boys in Skaling competition $= 20$

Number of boys took part $= 15$

Percentage of boys took part $= \frac{15}{20} \times 100 = 75\%$

(b) Number of boys did not participate $= 20 - 15 = 5$

Percentage of boys did not participate $= \frac{5}{20} \times 100 = 25\%$

11. Students in house A $= 48$

Students in house B $= 30$

Students in house C $= 12$

Students in house D $= +\ 10$

Total students in all houses of a class $= 100$

Students in house C $= 12$

Percentage of students in house C $= \frac{12}{100} \times 100 = 12\%$

12. Friend A had total money $= ₹\,550$

He spent percentage money from this $= 40\%$

Now, he spent money $= \frac{40}{100} \times 550 = ₹\,220$

Friend B had total money $= ₹\,700$

He spent percentage money from this $= 44\%$

He spent money $= \frac{44}{100} \times 700 = ₹\,308$

Hence friend B spent more money than friend A.

13. $\frac{116}{290} \times 100 = 4 \times 10 = 40\%$

14. Mr. Kumar earns in a month $= ₹\,31600$

Percentage of money spend by him $= 40\%$

Total money spend by him $= \frac{40}{100} \times 31600$

$= ₹\,12640$

15. Total petrol in Mr. Sood's car $= 20$ L

Percentage of petrol consumed $= 45\%$

Total petrol consumed $= \frac{45}{100} \times 20 = 9$ L

Petrol still remained $= 20 - 9 = 11$ L

16. (a) Total matches played by cricket team $= 75$

Number of matches won by them $= 60$

Percentage of matches won $= \frac{60}{75} \times 100 = 80\%$

(b) Total matches lost $= 75 - 60 = 15$

Percentage of matches lost $= \frac{15}{75} \times 100 = 20\%$

❑

14. Profit and Loss

Exercise 14.1

1. (a) CP = ₹ 1000, loss = ₹ 250 Hence SP = CP − loss
= ₹ 1000 − ₹ 250 = ₹ 750

(b) CP = ₹ 3400, Profit = ₹ 1500 Hence SP = CP + Profit
= ₹ 4500 + ₹ 1500 = ₹ 6000

(c) CP = ₹ 7080, Loss = ₹ 2080 Hence SP = CP − Loss
= ₹ 7080 − ₹ 2080 = ₹ 5000

(d) CP = ₹ 15000, Profit = ₹ 3000 Hence SP = CP + Profit
= ₹ 15000 + ₹ 3000 = ₹ 18000

2. (a) SP = ₹ 2850, Profit = ₹ 350 Hence CP = SP − Profit
= ₹ 2850 − ₹ 350 = ₹ 2500

(b) SP = ₹ 1600, loss = 400 Hence CP = SP + Loss
= ₹ 1600 + ₹ 400 = ₹ 2000

(c) SP = ₹ 4620 , Loss = ₹ 820, Hence CP = SP + Loss
= ₹ 4620 + ₹ 820 = ₹ 5440

(d) SP = ₹ 1000, Profit = ₹ 450 Hence CP = SP − Profit
= ₹ 1000 − ₹ 450 = ₹ 550

Exercise 14.2

1. (a) CP > SP He once Loss.

Loss = CP − SP = ₹ 250 − ₹ 200 = ₹ 50

$\text{Loss \%} = \frac{50}{250} \times 100 = 20\%$

(b) SP > CP, Hence Profit

Profit = SP − CP = ₹ 250 − ₹ 200 = ₹ 50

$\text{Profit \%} = \frac{50}{200} \times 100 = 25\%$

(c) SP > CP, Hence Profit.

$\text{Profit} = \text{SP} - \text{CP} = ₹\,800 - ₹\,500 = ₹\,300$

$\text{Profit \%} = \frac{300}{500} \times 100 = 60\%$

(d) CP > SP, Hence Loss

$\text{Loss} = \text{CP} - \text{SP} = ₹\,800 - ₹\,500 = ₹\,300$

$\text{Loss \%} = \frac{300}{800} \times 100 = 37.5\%$

(e) SP > CP, Hence Profit

$\text{Profit} = \text{SP} - \text{CP} = ₹\,2000 - ₹\,1000 = ₹\,1000$

$\text{Profit \%} = \frac{1000}{1000} \times 100 = 100\%$

(f) CP > SP, Hence Loss

$\text{Loss} = \text{CP} - \text{SP} = ₹\,2000 - ₹\,1000 = ₹\,1000$

$\text{Loss \%} = \frac{1000}{2000} \times 100 = 50\%$

2. (a) SP > CP, Hence Profit

$\text{Profit} = ₹\,4200 - ₹\,3500 = ₹\,700$

(b) CP > SP, Hence Loss

$\text{Loss} = ₹\,8300 - ₹\,8000 = ₹\,300$

(c) SP > CP, Hence Profit

$\text{Profit} = ₹\,17500 - ₹\,14000 = ₹\,3500$

(d) CP > SP, Hence Loss

$\text{Loss} = ₹\,9000 - ₹\,7500 = ₹\,1500$

(e) SP > CP, Hence Profit

$\text{Profit} = ₹\,15600 - ₹\,12000 = ₹\,3600$

3. (a) $\text{Loss} = \text{CP} - \text{SP} = ₹\,850 - ₹\,700 = ₹\,150$

(b) $\text{Profit} = \text{SP} - \text{CP} = ₹\,3000 - ₹\,2500 = ₹\,500$

(c) $\text{CP} = \text{SP} - \text{Profit} = ₹\,950 - ₹\,150 = ₹\,800$

(d) $\text{CP} = \text{SP} + \text{Loss} = ₹\,3250 + ₹\,750 = ₹\,4000$

(e) $\text{SP} = \text{CP} + \text{Profit} = ₹\,800 + ₹\,200 = ₹\,1000$

(f) $\text{SP} = \text{CP} - \text{Loss} = ₹\,800 - ₹\,200 = ₹\,600$

Word Problems

1. Selling price of an article = ₹ 2000
Cost price of an article = ₹ − 1800
Hence profit = ₹ 200

2. Selling price of an article = ₹ 9000
Cost price of an article = ₹ − 8000
Hence Profit = ₹ 1000

3. CP = ₹ 1200, SP = ₹ 1500, Hence Profit
Profit = ₹ 1500 − ₹ 1200 = ₹ 300

$$\text{Profit \%} = \frac{300}{1200} \times 100 = 25\%$$

4. CP = ₹ 3000, SP = 1800, Hence Loss
Loss = ₹ 3000 − ₹ 1800 = ₹ 1200

$$\text{Loss \%} = \frac{1200}{3000} \times 100 = 40\%$$

5. (a) Total cost price of double bed = ₹ 18500 + ₹ 1500 = ₹ 20,000
(b) Total CP = ₹ 20,000, SP = ₹ 25,000
Profit = SP − CP = ₹ 25,000 − ₹ 20,000, = ₹ 5000
(c) $\text{Profit \%} = \frac{\text{Profit}}{\text{CP}} \times 100 = \frac{5000}{20{,}000} \times 100 = 25\%$

6. CP = ₹ 50,000, SP = ₹ 53000
Profit = ₹ 53000 − ₹ 50,000 = ₹ 3000

$$\text{Profit \%} = \frac{3000}{50{,}000} \times 100 = 6\%$$

7. SP = ₹ 2350, Loss = ₹ 150
CP = SP + Loss = ₹ 2350 + ₹ 150 = ₹ 2500

$$\text{Loss \%} = \frac{150}{2500} \times 100 = 6\%$$

❑

15. Geometry

Exercise 15.1

1. (a) Ray (b) Line segment (c) Point (d) Line
2. Do it yourself
3. Line segment AC, line segment CB
4. Do it yourself
5. (a) Ray (b) Line (c) Ray
(d) Line segment (e) Line segment (f) Line
6. Because a line segment has two end points which defines a fixed length
7. (a) False (b) False (c) True
8. Do it yourself

Exercise 15.2

1. (a) $\angle ABC$, acute angle (b) $\angle FED$, Right angle
(c) $\angle POQ$, acute angle
(d) $\angle XYZ$, obtuse angle (e) $\angle RST$, acute angle
(f) $\angle LMN$, acute angle

2. Do it yourself

3. (a) Three (b) Three (c) $\angle AOB$ Acute angle, $\angle BOC$ Acute angle, $\angle AOC$ Obtuse angle

4. (a) Acute angle (b) Right angle (c) Acute angle
(d) Acute angle (e) Acute angle (f) Acute angle
(g) Right angle (h) Acute angle (i) Obtuse angle
(j) Acute angle

Exercise 15.3

1. Do it yourself **2.** Do it yourself **3.** Do it yourself

Exercise 15.4

1. (a) Acute angle (b) Acute angle (c) Straight angle
(d) Obtuse angle (e) Right angle (f) Obtuse angle
(g) Acute angle (h) Obtuse angle (i) Acute angle
(j) Obtuse angle

2. (a) Acute angle (b) Right angle (c) Acute angle
(d) Obtuse angle (e) Acute angle (f) Obtuse angle

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16. Triangles & Quadrilaterals

Exercise 16.1

1. (a) triangle (b) equal, Parallel (c) right-angled
(d) isosceles (e) third side (f) 180°
(g) quadrilateral

2. (a) Scalene triangle (b) Acute-angled triangle
(c) Isosceles triangle (d) Right-angled triangle
(e) Equilateral triangle (f) Obtuse-angled triangle

3. (a) No, because the sum of angles are not 180°
(b) No, because the sum of angles are not 180°
(c) No, because the sum of angles are not 180°
(d) Yes, because the sum of angles are 180°
(e) No, because the sum of angles are not 180°

4. (a) No, because the sum of any two sides is not greater than third side.
(b) Yes, because the sum of any two sides is greater than third side.
(c) No, because the sum of any two sides is not greater than third side.
(d) Yes, because the sum of any two sides is greater than third side.
(e) Yes, because the sum of any two sides is greater than third side.
(f) No, because the sum of any two sides is not greater than third side.
(g) Yes, because the sum of any two sides is greater than third side.
(h) Yes, because the sum of any two sides is greater than third side.

5. (a) $\angle ABC + \angle BCA + \angle CAB = 180°$
$65° + 45° + \angle CAB = 180°$
$\angle CAB = 180° - 110°$
$\angle CAB = 70°$

(b) $\angle DEF + \angle EFD + \angle FDE = 180°$
$105 + 35° + \angle FDE = 180°$
$\angle FDE = 180° - 140° \Rightarrow 40°$

(c) $\angle PQR + \angle RPQ + \angle PRQ = 180°$
$70° + 80° + \angle PRQ = 180°$
$\angle PRQ = 180° - 150° \Rightarrow 30°$

(d) $\angle LMN + \angle MNL + \angle MLN = 180°$
$75° + 90° + \angle MLN = 180°$
$\angle MLN = 180° - 165° \Rightarrow 15°$

(e) $\angle UVW + \angle VWU + \angle WUV = 180°$
$90 + 2\angle VWU = 180°$ ($VWU = WUV$)
$2\angle VWU = 180° - 90° \Rightarrow 90$
$\angle VWU = 90 \div 2 \Rightarrow 45$
Hence $\angle VWU = WUV = 45°$

6. (a) Parallelogram (b) Rhombus (c) Trapezium
(d) Square (e) Rectangle (f) Parallelogram

7. (a) $30° + 80° + 105° + x = 360° \Rightarrow 215° + x = 360°$
$\Rightarrow x = 360° - 215° = 145°$
Hence fourth angle $= 145°$

(b) $100° + 105° + 90° + x = 360° \Rightarrow 295° + x = 360°$
$\Rightarrow x = 360° - 295° = 65°$
Hence fourth angle $= 65°$

(c) $40° + 75° + 80° + x = 360° \Rightarrow 195° + x = 360°$
$\Rightarrow x = 360° - 195° = 165°$
Hence fourth angle $= 165°$

(d) $80° + 70° + 125° + x = 360° \Rightarrow 275° + x = 360°$
$\Rightarrow x = 360° - 275° = 85°$
Hence fourth angle $= 85°$

(e) $70° + 60° + 120° + x = 360° \Rightarrow 250° + x = 360°$
$\Rightarrow x = 360° - 250° = 110°$
Hence fourth angle $= 110°$

(f) $75° + 140° + 90° + x = 360° \Rightarrow 305° + x = 360°$
$\Rightarrow x = 360° - 305° = 55°$
Hence fourth angle = 55

(g) $65° + 75° + 115° + x = 360° \Rightarrow 255° + x = 360°$
$\Rightarrow x = 360° - 255° = 105°$
Hence fourth angle $= 105°$

(h) $100° + 80° + 10° + x = 360° \Rightarrow 190° + x = 360°$
$\Rightarrow x = 360° - 190° = 170°$
Hence fourth angle $= 170°$

8. (a) $3 \times 180° = 540°$ (b) $2 \times 180° = 360°$
(c) $6 \times 180° = 1080°$ (d) $3 \times 180° = 540°$

❑

17. Circle

Exercise 17.1

1. (a) Radii : OA, OB, OD (b) Chords : BD, BC
(c) Diameter : BD (d) Centre : O

2. (a) Diameter (b) Same (c) radius
(d) Circumference (e) Four

3. (a) Radii = OA, OB, OD, OC, OE ; Diameter = AB, CD.
(b) Radii = OP, OR, OQ, OT, OS ; Diameter = PQ
(c) Radii = ON, OC, OR, OM, OQ ; Diameter = QN, CM
(d) Radii = OT, OU, OV, OX, OW; Diameter = VX, TU

4. (a) AB, AC, BC
(b) PT, PQ, QR, TR
(c) LK, KN, NM, ML, KM, LN
(d) PU, UT, TS, SR, RQ, QP, PT, PR, TR

5. (a) radii = 4 cm, Diameter = 2 × radii = 8 cm
(b) radii = 20 cm, Diameter = 2 × radii = 40 cm
(c) radii = 8 cm, Diameter = 2 × radii = 16 cm
(d) radii = 14 cm, Diameter = 2 × radii = 28 cm
(e) radii = 10 cm, Diameter = 2 × radii = 20 cm
(f) radii = 6 cm, Diameter = 2 × radii = 12 cm
(g) radii = 28 cm, Diameter = 2 × radii = 56 cm

(h) radii = 12 cm, Diameter = 2 × radii = 24 cm
(i) radii = 42 cm Diameter = 2 × radii = 84 cm
(j) radii = 18 cm, Diameter = 2 × radii = 36 cm
(k) radii = 8 cm, Diameter = 2 × radii = 16 cm
(l) radii = 25 cm, Diameter = 2 × radii = 50 cm

6. (a) Diameter = 18 cm, radius = Diameter ÷ 2 = 9 cm
(b) Diameter = 24 cm, radius = Diameter ÷ 2 = 12 cm
(c) Diameter = 30 cm, radius = Diameter ÷ 2 = 15 cm
(d) Diameter = 52 cm, radius = Diameter ÷ 2 = 26 cm
(e) Diameter = 60 cm, radius = Diameter ÷ 2 = 30 cm
(f) Diameter = 12 cm, radius = Diameter ÷ 2 = 6 cm
(g) Diameter = 46 cm, radius = Diameter ÷ 2 = 23 cm
(h) Diameter = 28 cm, radius = Diameter ÷ 2 = 14 cm
(i) Diameter = 74 cm, radius = Diameter ÷ 2 = 37 cm
(j) Diameter = 42 cm, radius = Diameter ÷ 2 = 21 cm
(k) Diameter = 58 cm, radius = Diameter ÷ 2 = 29 cm
(l) Diameter = 50 cm, radius = Diameter ÷ 2 = 25 cm

7. (a) Diameter = 22 cm. Hence radius = 11 cm
Circumference = $2 \times \pi \times r = 2 \times 3.14 \times 11 = 69.08$ cm
(b) Radius = 14 cm
Circumference = $2 \times \pi \times r = 2 \times 3.14 \times 14 = 87.92$ cm
(c) Diameter = 24 cm, radius = 24 ÷ 2 = 12 cm
Circumference = $2 \times \pi \times r = 2 \times 3.14 \times 12 = 75.36$ cm
(d) Radius = 25 cm
Circumference = $2 \times \pi \times r = 2 \times 3.14 \times 25 = 157$ cm
(e) Diameter = 27 cm, radius = 27 ÷ 2 = 13.5 cm
Circumference = $2 \times \pi \times r = 2 \times 3.14 \times 13.5 = 84.78$ cm
(f) Radius = 21 cm
Circumference = $2 \times \pi \times r = 2 \times 3.14 \times 21 = 131.88$ cm
(g) Diameter = 18 cm, radius = 18 ÷ 2 = 9 cm
Circumference = $2 \times \pi \times r = 2 \times 3.14 \times 9 = 56.52$ cm
(h) Radius = 15 cm
Circumference = $2 \times \pi \times r = 2 \times 3.14 \times 15 = 94.2$ cm
(i) Diameter = 31 cm, radius 31 ÷ 2 = 15.5 cm
Circumference = $2 \times \pi \times r = 2 \times 3.14 \times 15.5 = 97.34$ cm
(j) Radius = 20 cm
Circumference = $2 \times \pi \times r = 2 \times 3.14 \times 20 = 125.6$ cm
(k) Diameter = 40 cm, radius = diameter ÷ 2 = 20 cm
Circumference = $2 \times \pi \times r = 2 \times 3.14 \times 20 = 125.6$ cm
(l) Radius = 23 cm
Circumference = $2 \times \pi \times r = 2 \times 3.14 \times 23 = 144.44$ cm

8. (a) $OA = 13 < 14$, Hence point is in interior
(b) $OB = 16 > 14$, Hence point is in exterior
(c) $OC = 18 > 14$, Hence point is in exterior
(d) $OD = 17 > 14$, Hence point is in exterior
(e) $OE = 20 > 14$, Hence point is in exterior
(f) $OF = 12 < 14$, Hence point is in interior

❑

18. Polygon

Exercise 18.1

1. (a) closed (b) not closed (c) closed (d) not closed
(e) not closed (f) closed (g) not closed (h) not closed

2. (a) Polygon figures : (a), (c), (e)
Non-polygon figures : (b), (d)

3. (a) Yes (b) Yes

4. (a) triangle (b) quadrilateral (c) 180° (d) 360°

5. Sum of the angles of triangle = 180°
$85° + 50° + x° = 180°$
$x° = 180° - 135° = 45°$

6. Sum of the angles of quadrilateral = 360°
$60° + 90° + 70° + x = 360°$
$x = 360° - 220° = 140°$

7. Yes, because sum of angles is 180°

8. No, because sum of angles is not equal to 180°

9. Yes, because sum of angles of quadrilateral is equal to 360°

10. No, because sum of angles of quadrilateral is not equal to 360°

11. Sum of angles of triangle = 180°
$x° = 60° + 65° = 180°$
$x° = 180° - 125° = 55°$

❑

19. Symmetry

Exercise 19.1

1. (a) Yes (b) No (c) Yes (d) Yes
(e) No (f) No

2. Do it yourself **3.** Do it yourself
4. Do it yourself **5.** Do it yourself

❑

20. Metric Measures

Exercise 20.1

1. (a) $3 \times 1000 = 3000$ m
(b) $2 \times 1000 + 652 = 2000 + 652 = 2652$ m
(c) $10 \times 1000 + 306 = 10000 + 306 = 10306$ m
(d) $2 \times 1000 + 89 = 2000 + 89 = 2089$ m

2. (a) $12 \times 100 = 1200$ cm
(b) $6 \times 100 + 36 = 600 + 36 = 636$ cm
(c) $19 \times 100 = 1900$ cm
(d) $45 \times 100 + 11 = 4500 + 11 = 4511$ cm

3. (a) $9 \times 10 + 4 = 90 + 4 = 94$ mm
(b) $15 \times 10 + 5 = 150 + 5 = 155$ mm
(c) $12 \times 10 = 120$ mm
(d) $20 \times 10 + 6 = 200 + 6 = 206$ mm

4. (a) $80 \div 10 = 8$ cm
(b) $82 \div 10 = 8$ cm 2 mm
(c) $200 \div 10 = 20$ cm
(d) $328 \div 10 = 32$ cm 8 mm

5. (a) $900 \div 100 = 9$ m
(b) $363 \div 100 = 3$ m 63 cm
(c) $4236 \div 100 = 42$ m 36 cm
(d) $2868 \div 100 = 28$ m 68 cm

6. (a) $4000 \div 1000 = 4$ km
(b) $2979 \div 1000 = 2$ km 979 m
(c) $5874 \div 1000 = 5$ km 874 m
(d) $9494 \div 1000 = 9$ km 494 m

Exercise 20.2

1. (a)

	km	m	cm
	77	356	85
+	55	563	77
+	6	099	06
	139	019	68

(b)

	km	m	cm
	147	96	8
+	302	52	6
+	74	14	0
	524	63	4

2. (a)

km	m
564	156
125	414
+ 415	102
1104	672

(b)

km	m	cm
66	162	32
+ 53	806	87
119	969	19

(c)

m	cm
406	8
369	25
+ 39	45
814	78

3. (a)

km	m
369	444
– 236	656
132	788

(b)

m	cm
116	77
– 86	96
29	81

(c)

km	m	cm
195	15	5
– 85	63	9
109	51	6

4. (a)

km	m
38	321
– 25	289
13	032

(b)

km	m
200	000
– 85	785
114	215

(c)

m	cm	mm
70	28	7
– 65	85	9
4	42	8

(d)

km	m	cm	mm
30	000	95	9
– 26	289	80	6
3	711	15	3

Exercise 20.3

1. (a) $1 \times 1000 = 1000$ mL

(b) $0.5 \times 1000 = 500$ mL

(c) $1.5 \times 1000 = 1500$ mL

(d) $5 \times 1000 = 5000$ mL

(e) $2.5 \times 1000 = 2500$ mL

2. (a) $1500 \div 1000 = 1.5$ L

(b) $2000 \div 1000 = 2$ L

(c) $6000 \div 1000 = 6$ L

(d) $15 \div 1000 = 0.015$ L

3. (a) (3×1000) mL $= 3$ L

(b) (5×1000) mL $= 5$ L

(c) (28×1000) mL $= 28$ L

(d) (3×1000) L $+ 750$ mL $= 3$ L 750 mL

(e) (8×1000) mL $+ 500$ mL $= 8$ L 500 mL

4. (a)

	800 L
+	220 L
	1020 L

(b)

	66 L	212 mL
+	55 L	98 mL
	121 L	310 mL

(c)

	383 L	48 mL
+	204 L	39 mL
	587 L	87 mL

(d)

	75 L	30 mL
	82 L	45 mL
+	63 L	48 mL
	220 L	123 mL

(e)

	34 L	35 mL
	62 L	315 mL
+	41 L	180 mL
	137 L	530 mL

(f)

	548 L	300 mL
	18 L	240 mL
+	8 L	650 mL
	575 L	190 mL

(g) 500 L 200 mL
+ 600 L 89 mL
1100 L 289 mL

(h) 247 L 956 mL
+ 189 L 634 mL
437 L 590 mL

(i) 90 L 155 mL
45 L 169 mL
+ 25 L 800 mL
161 L 124 mL

5. (a) 55 L
− 13 L
42 L

(b) 2836 L
− 1400 L
1436 L

(c) 86 L 300 mL
− 54 L 100 mL
32 L 200 mL

(d) 320 L 20 mL
− 161 L 250 mL
158 L 770 mL

(e) 52 L 626 mL
− 49 L 989 mL
2 L 637 mL

(f) 500 L 000 mL
− 340 L 212 mL
159 L 788 mL

(g) 350 L 120 mL
− 235 L 415 mL
114 L 705 mL

(h) 125 L 125 mL
− 117 L 533 mL
7 L 592 mL

(i) 99 L 075 mL
− 83 L 150 mL
15 L 925 mL

(j) 101 L 200 mL
− 66 L 750 mL
34 L 450 mL

(k) 303 L 00 mL
− 134 L 26 mL
168 L 974 mL

(l) 450 L 000 mL
− 175 L 565 mL
274 L 435 mL

Word Problems

	m	cm
1. Total length of electric wire roll	= 130	00
Length of piece to be cut	= − 18	75
Length of electric wire left	= 111	25

	km	m
2. Total distance travelled on first day	= 56	525
Total distance travelled on second day	= 45	265
Total distance travelled on third day	= + 38	285
Total distanc travelled	= 140	075

		km	m
3. Total distance between Delhi to Chandigarh	=	250	000
Distance covered by Mr. Pinto	=	− 178	575
Distance need to covered	=	71	425

		km	m	cm
4. In a school race, Anil ran	=	1	250	35
In a school race, Anju ran	=	2	325	65
In a school race, Amar ran	=	+ 3	175	22
Total distance covered by them	=	6	751	22

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21. Perimeter, Area and Volume

Exercise 21.1

1. (a) Perimeter = 3 + 4 + 6 = 13 cm

(b) Perimeter = 5 + 12 + 12 + 5 = 34 cm

(c) Perimeter = 3 + 1.5 + 3.5 + 2.5 + 4 = 14.5 cm

(d) Perimeter = 3 + 14 + 3 + 6 + 3 + 6 + 3 + 14 + 3 + 6 + 3 + 6 = 70 cm

(e) Perimeter = 5 + 5 + 7 + 8 + 7 = 32 cm

(f) Perimeter = 7 + 5 + 7 + 5 = 24 cm

2. (a) Perimeter = 2 (length + breadth) = 2(15 + 7) cm

= 2 × 22 = 44 cm

(b) Perimeter = 2 (length + breadth) = 2(5 + 6) cm

2 × 11 = 22 cm

(c) Perimeter = 2 (length + breadth) = 2(300 + 500) m

= 2 × 800 = 1600 m

3. (a) Perimeter = 4 × Side = 4 × 6 = 24 cm

(b) Perimeter = 4 × Side = 4 × 8 = 32 cm

(c) Perimeter = 4 × Side = 4 × 15 = 60 cm

4. (a) Perimeter = $AB + BC + CA$ = 6 + 8 + 10 = 24 cm

(b) Perimeter = $AB + BC + CA$ = 12 + 9 + 7 = 28 cm

(c) Perimeter = $AB + BC + CA$ = 150 + 200 + 100 = 450 m

5. (a) Perimeter of equilateral triangle = 3 × Side = 3 × 13 cm = 39 cm

(b) Perimeter = 3 × Side = 3 × 200 cm = 600 m

(c) Perimeter = 3 × Side = 3 × 8 cm = 24 cm

Word Problems

1. Length of the fence $= 2\,(\text{length} + \text{breadth}) = 2(20 + 15) = 2 \times 35 = 70\,\text{m}$

2. Perimeter of square $= 4 \times 1.8 = 7.2\,\text{km}$

3. Perimeter of figure $= 8 + 5 + 6.7 + 6.7 + 5 = 31.4\,\text{m}$

4. Perimeter of rectangle $= 2[L + B] = 2 \times [2.3 + 1.8] = 8.2\,\text{km}$

(a) One round $= 1 \times 8.2\,\text{km} = 8.2\,\text{km}$

(b) 15 round $= 15 \times 8.2\,\text{km} = 123\,\text{km}$

5. (a) Perimeter of triangular field $= 50\,\text{m} + 70\,\text{m} + 60\,\text{m} = 180\,\text{m}$

(b) Perimeter of triangular field = perimeter of square field

$180\,\text{m} = 180\,\text{m}$

(c) Perimeter of square $= 4 \times \text{Side}$

$180 = 4 \times \text{Side}$

Hence Side $= \dfrac{180}{4} = 45\,\text{m}$

Exercise 21.2

1. (a) Area of rectangle $= L \times b = 4 \times 3 = 12\,\text{cm}^2$

(b) Area of rectangle $= L \times B = 10 \times 5 = 50\,\text{cm}^2$

(c) Area of rectangle $= L \times B = 15 \times 4 = 60\,\text{m}^2$

(d) Area of rectangle $= L \times b = 7 \times 5 = 35\,\text{km}^2$

2. (a) Area of square $= (\text{Side})^2 = (10)^2 = 100\,\text{cm}^2$

(b) Area of square $= (\text{Side})^2 = (13)^2 = 169\,\text{cm}^2$

(c) Area of square $= (\text{Side})^2 = (15)^2 = 225\,\text{cm}^2$

(d) Area of square $= (\text{Side})^2 = (20)^2 = 400\,\text{cm}^2$

3. (a) $6\,\text{m} \times \mathbf{8m} = 48$ sq.m (b) $8\,\text{cm} \times \mathbf{9\ cm} = 72$ sq.m

(c) $5\,\text{m} \times \mathbf{5\ m} = 25$ Sq.m (d) $\mathbf{4m} \times 3\text{m} = 12$ Sq.m

4. (a) Area of rectangle $ABCD = L \times b = 3 \times 12 = 36\,\text{cm}^2$

Area of rectangle $DEFG = L \times b = 12 \times 3 = 36\,\text{cm}^2$

Total area of both rectangles $= 36\,\text{cm}^2 + 36\,\text{cm}^2 = 72\,\text{cm}^2$

(b) Area of rectangle $ABCD = L \times b = 8 \times 2 = 16\,\text{cm}^2$

Area of rectangle $EFGH = L \times b = 8 \times 2 = 16\,\text{cm}^2$

Total area of both rectangles $= 16\,\text{cm}^2 + 16\,\text{cm}^2 = 32\,\text{cm}^2$

(c) Area of rectangle $ABCD = 6 \times 2 = 12\,\text{cm}^2$

Area of rectangle $DEFJ = 8 \times 2 = 16\,\text{cm}^2$

Area of rectangle $HIJG = 4 \times 2 = 8\,\text{cm}^2$

Total area of all rectangles $= 12\,\text{cm}^2 + 16\,\text{cm}^2 + 8\,\text{cm}^2 = 36\,\text{cm}^2$

(d) Area of rectangle $ABCD = 6 \times 2 = 12\,\text{cm}^2$

Area of rectangle $EFGH = 10 \times 2 = 20\,\text{cm}^2$

Area of rectangle $IJKL = 2 \times 6 = 12\,\text{cm}^2$

Total Area of all rectangles $= 12\,\text{cm}^2 + 20\,\text{cm}^2 + 12\,\text{cm}^2 = 44\,\text{cm}^2$

(e) Area of rectangle $ABCD = 2 \times 10 = 20\,\text{cm}^2$

Area of rectangle $EFGH = 2 \times 10 = 20\,\text{cm}^2$

Area of rectangle $MNOP = 4 \times 2 = 8\,\text{cm}^2$

Total area of all rectangles $= 20\,\text{cm}^2 + 20\,\text{cm}^2 + 8\,\text{cm}^2 = 48\,\text{cm}^2$

(f) Area of rectangle $ABCD = 4 \times 2 = 8\,\text{cm}^2$

Area of rectangle $MNOP = 10 \times 12 = 120\,\text{cm}^2$

Total area of both rectangles $= 120\,\text{cm}^2 + 8\,\text{cm}^2 = 128\,\text{cm}^2$

5. (a) Area of rectangle $ABJI = 12 \times 3 = 36\,\text{cm}^2$

Area of rectangle $EJCD = 3 \times 2 = 6\,\text{cm}^2$

Area of rectangle $FGHI = 3 \times 2 = 6\,\text{cm}^2$

Total area of all rectangles $= 36\,\text{cm}^2 + 6\,\text{cm}^2 + 6\,\text{cm}^2 = 48\,\text{cm}^2$

Perimeter of figure $= 12 + 6 + 2 + 3 + 8 + 3 + 2 + 6 = 42\,\text{cm}$

(b) Area of rectangle $ABIJ = 2 \times 10 = 20\,\text{cm}^2$

Area of rectangle $EFGH = 2 \times 10 = 20\,\text{cm}^2$

Area of rectangle $CDHI = 5 \times 2 = 10\,\text{cm}^2$

Area of all rectangles $= 20\,\text{cm}^2 + 20\,\text{cm}^2 + 10\,\text{cm}^2 = 50\,\text{cm}^2$

Perimeter of figure $= 2 + 8 + 5 + 8 + 2 + 10 + 9 + 10 = 54\,\text{cm}$

Word Problems

1. Side of square shaded picture $= 25$ cm

Length of the frame $= 4 \times 25\,\text{cm} = 100\,\text{cm}$

2. Area of rectangular plot $=$ Length $\times$ breadth

$= 7\,\text{km} \times 5\,\text{km} = 35\,\text{km}$

3. Perimeter of rectangular field $= 2$ (Length + breadth)

$= 2\,(2.5 + 1.5)$

$= 2 \times 4 = 8\,\text{km}$

Distance covered in making 10 complete rounds

$= 10 \times 80\,\text{km} = 80\,\text{km}$

Exercise 21.3

1. (a) Volume of one cube = 1
Volume of figure = $7 \times 1 = 7$ cu.cm
(b) Volume of figure = $8 \times 1 = 8$ cu.cm
(c) Volume of figure = $9 \times 1 = 9$ cu.cm
(d) Volume of figure = $15 \times 1 = 15$ cu.cm
(e) Volume of figure = $22 \times 1 = 22$ cu.cm
(f) Volume of figure = $11 \times 1 = 11$ cu.cm
(g) Volume of figure = $18 \times 1 = 18$ cu.cm
(h) Volume of figure = $27 \times 1 = 27$ cu.cm

2. (a) Volume = $L \times b \times h = 9\,\text{cm} \times 7\,\text{cm} \times 6\,\text{cm} = 378$ cu.cm
(b) Volume = $L \times b \times h = 14\,\text{cm} \times 10\,\text{cm} \times 8\,\text{cm} = 1120$ cu.cm
(c) Volume = $L \times b \times h = 8\,\text{cm} \times 6\,\text{cm} \times 2\,\text{cm} = 96$ cu.cm
(d) Volume = $L \times b \times h = 27\,\text{cm} \times 17\,\text{cm} \times 11.5\,\text{cm} = 5278.5$ cu.cm
(e) Volume = $L \times b \times h = 12.5\,\text{cm} \times 10\,\text{cm} \times 8.25\,\text{cm} = 1031.25$ cu.cm
(f) Volume = $L \times b \times h = 9.25\,\text{m} \times 8\,\text{m} \times 6\,\text{m} = 444$ cu.m

5. (a) $V = L \times b \times h = 8\,\text{cm} \times 10\,\text{cm} \times 7\,\text{cm} = 560$ cu.cm
(b) $V = L \times b \times h = 15\,\text{cm} \times 11\,\text{m} \times 9.5\,\text{m} = 1567.5$ cu.cm
(c) $V = L \times b \times h \Rightarrow H = V \div L \times b = 662.175 \div 147.15$ $H = 4.5\,\text{m}$
(d) $V = L \times b \times h \Rightarrow B = V \div L \times h = 160.875 \div 35.75$ $B = 4.5\,\text{m}$
(e) $V = L \times b \times h \Rightarrow L = V \div b \times h = 397575 \div 14725$ $B = 27\,\text{m}$
(f) $V = L \times b \times h \Rightarrow L = V \div b \times h = 2506.58 \div 752.6$ $V = 33.3\,\text{m}$

4. (a) Volume = $(\text{edge})^3 = 9 \times 9 \times 9 = 729$ cu.cm
(b) Volume = $(\text{edge})^3 = 27 \times 27 \times 27 = 19683$ cu.cm
(c) Volume = $(\text{edge})^3 = 40 \times 40 \times 40 - 64000$ cu.cm
(d) Volume = $(\text{edge})^3 = 52 \times 52 \times 52 = 140608$ cu.cm
(e) Volume = $(\text{edge})^3 = (12.2)^3 = 1815.848$ cu.cm
(f) Volume = $(\text{edge})^3 = (14.5)^3 = 3048.625$ cu.cm
(g) Volume = $(\text{edge})^3 = (22.4)^3 = 11239.424$ cu.m
(h) Volume = $(\text{edge})^3 = (35.5)^3 = 44738.875$ cu.m
(i) Volume $(\text{edge})^3 = (1.20)^3 = 1.728$ cu.cm
(j) Volume $(\text{edge})^3 = (10.12)^3 = 1036.43$ cu.cm
(k) Volume = $(\text{edge})^3 = (40.3)^3 = 65450.827$ cu.m
(l) Volume = $(\text{edge})^3 = (18.3)^3 = 6128.487$ cu.m

Word Problems

1. Volume = length × breadth × height
= 72 cm × 62 cm × 32 cm = 142848 cu.cm

2. Volume = length × breadth × height
= 24 m × 14 m × 10 m = 3360 cu.cm

3. Volume = $(\text{edge})^3$ = 12.5 m × 12.5 m × 12.5 m = 1953.125 cu.m

4. 10 m = (10 × 100) cm = 1000 cm 6 m = (6 × 100) cm = 600 cm;
3.4m = (3.4 × 100) cm = 340 cm
Number of plastic boxes put in this carton = $\frac{1000 \times 600 \times 340}{40 \times 30 \times 10}$
= 170 × 100 = 17000 boxes

5. (a) Volume will be increased by 8 times
(b) Volume will be decreased by 8 times

6. Length = 250 cm, breadth = 180 cm, volume 1,80,000 cu.cm
Volume = length × breadth × height
Height = $\frac{\text{Volume}}{\text{Length} \times \text{breadth}} = \frac{180000}{250 \times 180} = 4$ cm

7. Outer measure of a cardboard box = 4 m × 3.6 m × 1 m = 14.4 cu.m
Inner measure of an empty box = 3.8 m × 3.4 m × 0.8 m = 10.336 cu.m
Volume of cardboard used = 14.4 m – 10.336 m = 4.069 cu.m

8. 11 m = (11 × 100) cm = 1100 cm ; 5 m = (5 × 100) cm = 500 cm
50 m = (50 × 100) cm = 5000
Area of the wall = 1100 × 500 × 5000 = 2750000000 cu.m
Area of a brick = 20 × 11 × 8 = 1760 cu.cm
Number of bricks = $\frac{2750000000}{1760} = 1562500$ cu.cm
Price of 500 bricks = ₹ 200
Price of 1562500 bricks = $\frac{1562500}{500} \times 200 =$ ₹ 6,25,000

❑

22. Data Handling

Exercise 22.1

1.

Name of sports	Tally marks	Number of people
Volley ball	III	3
Basket ball	𝍸 II	7
Cricket	𝍸 IIII	9
Hockey	𝍸 I	6

2.

Height (in cm)	Tally marks	Number of students
140	𝍸	5
142	𝍸	5
145	𝍸 IIII	9
147	𝍸 II	7
148	IIII	4

3.

Marks obtained	Tally marks	Number of students
56	II	2
62	IIII III	8
70	IIII IIII	10
75	IIII II	7
79	IIII II	7
82	IIII	4
98	II	2

(a) 98 (b) 56 (d) 20 students
(d) 70 (e) 6 students (f) 10 students

4.

Flavours of ice-geam	Tally marks	Number of children
Strawberry	𝍸 III	8
Vanilla	𝍸 II	7
Butterscotch	𝍸 I	6
Chocolate	𝍸 𝍸 II	12
Tutty fruity	𝍸 II	7

(a) Chocolate liked by 12 childrens
(b) Butterscotch, liked by 6 childrens
(c) Vanilla and Tutty-fruity
(d) 4
(e) 22

5. (a) Monday (b) Wednesday (c) 6 Students (d) 42 students

6.

Brands of motarcycle	Tally marks	Number of motorbike sold
Yamaha (Y)	𝍸 𝍸 II	12
Honda (H)	𝍸 𝍸 𝍸 I	16
TVS (T)	𝍸 𝍸 II	12
Bajaj (B)	𝍸 II	8

(a) Honda (b) Bajaj (c) Yamaha and TVS
(d) 8 bikes (e) 4 bikes (f) 48

Exercise 22.2

1. (a) $4 \times 20 = 80$ (b) $5 \times 20 = 100$ (c) 3rd hour

2. (a) 60 lakh (b) 2004-05 (c) 2001-02

4. (a) Students C (b) 5-2 = 3 marks (c) 1 mark less than
5. (a) 3 (b) 5 (c) 4 (d) 6
6. Do it yourself **7.** Do it yourself
8. (a) Car (b) 30 students (c) $40-10=30$ students

Exercise 22.3

1. (a) Y-axis (b) 2 students (c) 4 students
(d) Wednesday (e) Monday
2. (a) 2005 (b) 2002 (c) 60 tons
(d) 290 tons
3. (a) Saturday (b) $80-30=50$ letters
(c) $50-30=20$ letters
(d) $70+50+30+60+80+20=310$ letters
(e) $70+50+30=150$ letters.
4. (a) $5\times 50=250$ cars
(b) April (c) May
(d) $(8\times 50)-(6\times 50)=400-300=100$ cars
(e) $(5\times 50)+(6\times 50)+(4\times 50)+(8\times 50)+(3\times 50)$
$=250+300+200+400+150=1300$ cars.
5. (a) $11\times 5=55$ fans (b) Saturday (c) Wednesday
(d) $(10\times 5)-(5\times 5)\Rightarrow 50-25=25$ fans
(e) $(11\times 5)-(6\times 5)\Rightarrow 55-30=25$ fans.
(f) $(10\times 5)+(6\times 5)+(11\times 5)+(5\times 5)+(7\times 5)+(2\times 5)$
$=50+30+55+25+35=10=205$ fans
6. (a) Do it yourself (b) Do it yourself (c) Do it yourself

❑

Model Test Paper-I

1. (a) Six thousand two hundred seventy.
(b) Five thousand four hundred ninety three.
(c) Nine thousand eight hundred only.
(d) Five thousand and twenty only.
(e) Six thousand and three only.
(f) Six thousand and thirty only.
(g) Eight thousand and thirteen only.
2. (a) XLIV (b) XXXVIII (c) XCV (d) LXIX
(e) LXXXVII (f) XCII (g) LXVI (h) LIV

3. (a) $\begin{array}{r} 452 \\ +\,327 \\ \hline 779 \end{array}$ (b) $\begin{array}{r} 436 \\ +\,543 \\ \hline 979 \end{array}$

(c) $\begin{array}{r} 82 \\ +\,373 \\ \hline 455 \end{array}$ (d) $\begin{array}{r} 543 \\ 22 \\ +\,34 \\ \hline 599 \end{array}$

4. (a) $\begin{array}{r} 5367 \\ -5146 \\ \hline 221 \end{array}$ (b) $\begin{array}{r} 3685 \\ -2143 \\ \hline 1542 \end{array}$

(c) $\begin{array}{r} 4329 \\ -2000 \\ \hline 2329 \end{array}$ (d) $\begin{array}{r} 4895 \\ -3274 \\ \hline 1621 \end{array}$

(e) $\begin{array}{r} 5824 \\ -3702 \\ \hline 2122 \end{array}$

5. Factory produced bulbs in January = 793
Factory produced bulbs in February = 1249
Factory produced bulbs in March = + 2333
Total bulbs produced in three Month = 4375

6. Total number of rows = 200
People sit in each row = 64
Number of people in auditorium = $200 \times 64 = 12{,}800$

7. (a)

2	4, 12
2	2, 6
3	1, 3
	1, 1

L.C.M. $= 2 \times 2 \times 3 = 12$

(b)

3	9, 15
3	3, 5
5	1, 5
	1, 1

L.C.M. $= 3 \times 3 \times 5 = 45$

(c)

5	5, 11
11	1, 11
	1, 1

L.C.M. $= = 5 \times 11 = 55$

(d)

3	11, 15
5	11, 5
11	11, 1
	1, 1

L.C.M. $= 3 \times 5 \times 11 = 165$

8. ₹ 9365.85 + ₹ 2469.75 = ₹ 11835.60

₹ 1985.20 + ₹ 267.90 = ₹ 2253.10

₹ 11835.60 − ₹ 2253.10 = ₹ 9582.50

9. Total number of pencils $= 24$

Number of pencil sharp $= \frac{1}{6} \times 24 = 4$

Number of pencil not sharp $= 24 - 4 = 20$

Model Test Paper-II

1. (a) 8.6, 8.7, 8.8 (b) 20.1, 20.2, 20.3
(c) 6.05, 6.06, 6.07 (d) 12.98, 12.99, 13.00

2. (a) $\frac{37}{100} \times 85$ $\frac{85}{100} \times 40$

$= \frac{629}{20} = 31.45$ $= 34$

Hence 85% of 40 is greater.

(b) $\frac{10}{100} \times 500$ $\frac{20}{100} \times 300$

$= 50$ $= 60$

Hence 20% of 300 is greater

3. Total cost price of old double bed = ₹ 18500 + ₹ 1500 = ₹ 20000

Selling price of old double bed = ₹ 25000

(a) ₹ 20000

(b) Profit = Selling price − Cost price

= ₹ 25000 − ₹ 20000 = ₹ 5000

(c) Profit percent $= \frac{\text{Profit}}{\text{C.P}} \times 100 = \frac{5000}{20000} \times 100 = 25\%$

4. (a) triangle (b) equal, parallel (c) right
(d) isosceles (e) third side (f) 180°

(g) quadrilateral

5. (a) OA, OB, OD (b) BC, BD
(c) BD (d) O

6.

For the school race Anil ran	=	1 km 250 m 35 cm
For the school race Anju ran	=	2 km 325 m 65 cm
For the school race Amar ran	=	+ 3 km 175 m 22 cm
Total distance they cover together	=	6 km 751 m 22 cm

7. (a) Income of man during 2003-04 is 60 lakh per year
(b) Man earned maximum in year 2004-05
(c) Man earned minimum in year 2001-02