

Maths

Teacher's Manual

Class IV

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Vrindavan Books International

New Delhi

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Exercise 1A

1. (a) 2846 (b) 4260 (c) 7275 (d) 9684
2. (a) Three thousand seventy-five
 (b) Three thousand eight hundred five
 (c) Four thousand seven hundred twenty-fix
 (d) Nine thousand four hundred seventy
3. (a) 100 (b) 9999 (c) 1000
4. (a) 5357, 5367, 5377 (b) 1450, 1500, 1550
 (c) 3856, 3858, 3860 (d) 9123, 9128, 9133
5. 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353

So there are eight numbers in between 2345 and 2354.

6. Smallest number = 1048

7. Largest number = 8632

- | | | | | | |
|--------|------|------|--|--|--|
| 8. (a) | 2587 | 2578 | 2758 | 2785 | 2875 |
| (b) | 3859 | 3895 | 3589 | 3598 | 3985 |
| (c) | 4562 | 4556 | 4652 | 4625 | 4256 |
| 9. (a) | 3972 | 3729 | 3792 | 3279 | 3927 |
| (b) | 3685 | 3658 | 3865 | 3568 | 3856 |
| (c) | 8185 | 8192 | 8199 | 8149 | 8139 |

10. (a) $5738 = 5000 + 700 + 30 + 8$
 (b) $7531 = 7000 + 500 + 30 + 1$
 (c) $7074 = 7000 + 000 + 70 + 4$
 (d) $8603 = 8000 + 600 + 00 + 3$
11. (a) $1000 + 600 + 80 + 7 = 1687$
 (b) $4000 + 600 + 70 + 2 = 4672$
 (c) $8000 + 300 + 20 + 0 = 8320$
 (d) $9000 + 300 + 20 + 3 = 9323$
12. (a) 196, 299, 394, 219, 316

- $196 < 219 < 299 < 316 < 394$
 $196, 219, 299, 316, 394$
- (b) $1002, 3002, 5002, 4002$
 $1002 < 3002 < 4002 < 5002$
 $1002, 3002, 4002, 5002$
- (c) $1419, 2933, 2325, 4213, 4038$
 $1419 < 2325 < 2933 < 4038 < 4213$
 $1419, 2325, 2922, 4038, 4213$
- (d) $6216, 5518, 7016, 4450, 4039$
 $4039 < 4450 < 5518 < 6216 < 7016$
 $4039, 4450, 5518, 6216, 7016$
- (e) $9153, 9135, 9513, 9531, 5139$
 $5139 < 9135 < 9153 < 9513 < 9531$
 $5139, 9135, 9153, 9513, 9531$
13. (a) $3285, 3258, 3825, 3852$
 $3852 > 3825 > 3285 > 3258$
 $3852, 3825, 3285, 3258$
- (b) $4528, 4582, 4852, 4825$
 $4852 > 4825 > 4582 > 4528$
 $4852, 4825, 4582, 4528$
- (c) $5476, 5467, 5746, 5764$
 $5764 < 5746 < 5476 < 5467$
 $5764, 5746, 5476, 5467$
- (d) $6825, 6852, 6582, 6528$
 $6852 < 6825 < 6582 < 6528$
- (e) $7584, 7548, 7458, 7485$
 $7584 < 7548 < 7485 < 7458$
 $7584, 7548, 7485, 7458$
14. (a) $79\overline{6}3 = 3$ (b) $29\overline{6}3 = 60$
 (c) $8\overline{7}30 = 8000$ (d) $9\overline{1}36 = 100$
15. (a) $3987, 3989$ (b) $3916, 3918$
 (c) $9507, 9509$ (d) $8989, 8991$
 (e) $4390, 4392$ (f) $8119, 8121$

$$\begin{array}{r}
 16. \quad (a) \quad 3534 \\
 + 2994 \\
 + 883 \\
 \hline
 7411 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 (b) \quad 3883 \\
 + 3887 \\
 + 608 \\
 \hline
 8378 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 (c) \quad 3917 \\
 + 4932 \\
 + 387 \\
 \hline
 9236 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 17. \quad (a) \quad 9253 \\
 - 6706 \\
 \hline
 2547 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 (b) \quad 6345 \\
 - 2785 \\
 \hline
 3560 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 (c) \quad 6007 \\
 - 2928 \\
 \hline
 3079 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 18. \quad 9913 \\
 - 8684 \\
 \hline
 1229 \\
 \hline
 \end{array}$$

So, 1229 must be added to 8684 to get 9913.

$$\begin{array}{r}
 19. \quad 7487 \\
 - 6703 \\
 \hline
 0784 \\
 \hline
 \end{array}$$

784 must be subtracted from 7487 to get 6703.

$$20. \quad (a) \quad 17 \text{—} \text{XVII}$$

$$(b) \quad 5 \text{—} \text{V}$$

$$(c) \quad 28 \text{—} \text{XXVIII}$$

$$(d) \quad 31 \text{—} \text{XXXI}$$

$$\begin{array}{r}
 21. \quad 4312 \\
 + 3919 \\
 + 1912 \\
 \hline
 10143 \\
 \hline
 \end{array}$$

So, total 10143 votes were polled.

$$\begin{array}{rcl}
 22. \text{ Pankaj earning} & = & ₹ 3250 \\
 \text{less} & = & \underline{-575} \\
 \text{Sanjay earning} & & ₹ 2675
 \end{array}$$

$$\text{Total earning} = 3250 + 2675$$

$$\begin{array}{r}
 3250 \\
 + 2675 \\
 \hline
 5925
 \end{array}$$

So, total earning of Pankaj and Sanjay is ₹5925.

$$\begin{array}{r}
 23. \text{ (a)} \quad 352 \\
 \times 8 \\
 \hline
 2816
 \end{array}$$

$$\begin{array}{r}
 \text{(b)} \quad 365 \\
 \times 9 \\
 \hline
 3285
 \end{array}$$

$$\begin{array}{r}
 \text{(c)} \quad 95 \\
 \times 27 \\
 \hline
 665 \\
 1900 \\
 \hline
 2565
 \end{array}$$

$$\begin{array}{r}
 \text{(d)} \quad 83 \\
 \times 39 \\
 \hline
 747 \\
 2490 \\
 \hline
 3237
 \end{array}$$

$$\begin{array}{r}
 \text{(e)} \quad 6 \overline{)3456} \quad 576 \\
 \underline{30} \\
 45 \\
 \underline{- 42} \\
 36 \\
 \underline{36} \\
 \times
 \end{array}$$

$$\begin{array}{r}
 \text{(f)} \quad 5 \overline{)1995} \quad 399 \\
 \underline{15} \\
 49 \\
 \underline{- 45} \\
 45 \\
 \underline{45} \\
 \times
 \end{array}$$

$$24. \text{ 1 week} = 7 \text{ days}$$

$$\text{In 7 days bulbs produced} = 4515$$

$$\text{In 1 day bulbs produced} = 4515 \div 7$$

So, 645 bulbs.

$$\begin{array}{r}
 7 \overline{)4515} \quad 645 \\
 \underline{42} \\
 31 \\
 \underline{- 28} \\
 35 \\
 \underline{35} \\
 \times
 \end{array}$$

25. 1 soap cost = ₹15.75

12 soaps cost = 15.75×12

$$\begin{array}{r} 15.75 \\ \times 12 \\ \hline 3150 \\ 15750 \\ \hline 18900 \end{array}$$

Cost of 12 such soaps ₹ 189.

26. Numerator = 5

Denominator = 7

Fraction = $\frac{5}{7}$

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

28. (a) $\frac{6}{11} + \frac{4}{11} = \frac{6+4}{11} = \frac{10}{11}$

(b) $\frac{3}{25} + \frac{9}{25} = \frac{3+9}{25} = \frac{12}{25}$

(c) $\frac{9}{19} + \frac{8}{10} = \frac{9+8}{19} = \frac{17}{19}$

(d) $\frac{19}{33} + \frac{5}{33} = \frac{19+5}{33} = \frac{24}{33}$ or $\frac{8}{11}$

(e) $\frac{4}{5} - \frac{1}{5} = \frac{4-1}{5} = \frac{3}{5}$

(f) $\frac{18}{19} - \frac{9}{19} = \frac{18-9}{19} = \frac{9}{19}$

(g) $\frac{13}{17} - \frac{4}{17} = \frac{13-4}{17} = \frac{9}{17}$

(h) $\frac{26}{29} - \frac{5}{29} = \frac{26-5}{29} = \frac{21}{29}$

$$29. \quad (a) \quad \frac{4}{5} > \frac{2}{5}$$

$$(c) \quad \frac{5}{8} > \frac{5}{9}$$

$$(e) \quad \frac{4}{7} > \frac{4}{9}$$

$$(b) \quad \frac{9}{11} > \frac{8}{11}$$

$$(d) \quad \frac{6}{11} > \frac{6}{13}$$

$$(f) \quad \frac{7}{4} > \frac{3}{4}$$

$$30. \quad (a) \quad \begin{array}{r} \text{₹} \quad \text{P} \\ 13 \quad 25 \\ + 29 \quad 30 \\ \hline 42 \quad 55 \end{array}$$

$$(c) \quad \begin{array}{r} \text{₹} \quad \text{P} \\ 325 \quad 75 \\ + 78 \quad 50 \\ + 90 \quad 25 \\ \hline 494 \quad 50 \end{array}$$

$$(b) \quad \begin{array}{r} \text{₹} \quad \text{P} \\ 133 \quad 25 \\ + 379 \quad 85 \\ + 102 \quad 50 \\ \hline 615 \quad 60 \end{array}$$

$$31. \quad (a) \quad \begin{array}{r} \text{₹} \quad \text{P} \\ 95 \quad 50 \\ - 16 \quad 25 \\ \hline 79 \quad 25 \end{array}$$

$$(c) \quad \begin{array}{r} \text{₹} \quad \text{P} \\ 301 \quad 20 \\ - 78 \quad 75 \\ \hline 222 \quad 45 \end{array}$$

$$(b) \quad \begin{array}{r} \text{₹} \quad \text{P} \\ 379 \quad 25 \\ - 199 \quad 75 \\ \hline 179 \quad 50 \end{array}$$

$$32. \quad (a) \quad \begin{array}{r} \text{₹} \quad \text{P} \\ 8.25 \\ \times 3 \\ \hline 24.75 \end{array}$$

$$(b) \quad \begin{array}{r} \text{₹} \quad \text{P} \\ 124.50 \\ \times 8 \\ \hline 996.00 \end{array}$$

$$\begin{array}{r}
 \text{(c)} \quad \text{₹ P} \\
 565.75 \\
 \times 9 \\
 \hline
 5091.75
 \end{array}$$

$$\begin{array}{r}
 33. \text{ (a)} \quad \text{₹ P} \\
 6 \overline{) 30.60} \quad 5.10 \\
 \underline{30} \\
 6 \\
 \underline{6} \\
 0 \\
 \underline{0} \\
 \times \\
 \hline
 \hline
 \end{array}$$

Ans. : ₹ 5.10

$$\begin{array}{r}
 \text{(b)} \quad \text{₹ P} \\
 9 \overline{) 108.27} \quad 12.03 \\
 \underline{9} \\
 18 \\
 \underline{18} \\
 2 \\
 \underline{-0} \\
 27 \\
 \underline{27} \\
 \times \\
 \hline
 \hline
 \end{array}$$

Ans. : ₹ 12.03

$$\begin{array}{r}
 \text{(c)} \quad \text{₹ P} \\
 8 \overline{) 216.08} \quad 27.01 \\
 \underline{16} \\
 56 \\
 \underline{56} \\
 08 \\
 \underline{08} \\
 \times \\
 \hline
 \hline
 \end{array}$$

Ans. : ₹ 27.01

$$\begin{array}{r}
 \text{34. (a)} \quad \text{Kg} \quad \text{g} \\
 31 \quad 327 \\
 + 78 \quad 789 \\
 + 123 \quad 450 \\
 \hline
 233 \quad 566
 \end{array}$$

$$\begin{array}{r}
 \text{(b)} \quad \text{Kg} \quad \text{g} \\
 503 \quad 500 \\
 - 124 \quad 175 \\
 \hline
 379 \quad 325
 \end{array}$$

$$\begin{array}{r}
 \text{(c)} \quad \text{Kg} \quad \text{g} \\
 8 \quad 500 \\
 \times \quad 5 \\
 \hline
 42 \quad 500
 \end{array}$$

35. Do yourself.

36. (a) 3 o'clock (b) 6:35 O'clock (c) 9:45 O'clock

37. (a) 366 (b) 29 (c) same (d) 31
(e) 52

38. 7.7 cm

Exercise 2

1. (a) 8,735 : Eight thousand seven hundred thirty-five
 (b) 68,437 : Sixty eight thousand four hundred thirty-seven
 (c) 2,68,437 : Two lakh sixty eight thousand four hundred thirty seven
 (d) 32,68,736: Thirty-two lakh sixty eight thousand seven hundred thirty-six
2. (a) 12,678 (b) 1,00,234 (c) 30,19,300 (d) 99,00,775
3. $9999 + 1 = 10,000$ 4. $100,000 - 1 = 99999$
5. Predecessor (-1) Successor (+1)

(a) 39398	39400
(b) 68484	68486
(c) 188887	188889
(d) 3451749	3451751
(e) 20000	20002
6. (a) $37605 = 30000 + 7000 + 600 + 00 + 5$
 (b) $340650 = 300000 + 40000 + 0000 + 600 + 50 + 0$
 (c) $1457003 = 1000000 + 400000 + 50000 + 7000 + 000 + 00 + 3$
 (d) $590000 = 500000 + 90000 + 0000 + 000 + 00 + 0$
7. (a) $247560 = 2 \text{ lakhs, } 47 \text{ thousands, } 5 \text{ hundreds, } 6 \text{ tens}$
 (b) $830230 = 8 \text{ lakhs, } 30 \text{ thousands, } 2 \text{ hundreds, } 3 \text{ tens}$
 (c) $50600 = 50 \text{ thousands, } 6 \text{ hundreds}$
 (e) $9000 = 9 \text{ thousands}$
8. $13543850 = \text{One crore thirty five lakhs forty three thousands eight hundred fifty}$

9. (a) 390,254 = Three hundred ninety thousands two hundred fifty four
 (b) 5,456,085 = Five millions four hundred fifty six thousands eighty five
 (c) 158,921,056 = One hundred fifty eight millions nine hundred twenty one thousands fifty six
 (d) 20,030,405 = Twenty millions thirty thousands four hundred five
10. (a) 390,254 (b) 56,702,868
 (c) 200,304,056 (d) 92,030,222

Exercise 3

1. (a) $44281 < 65823$ (b) $393941 > 295224$
 (c) $740003 > 579999$ (d) $270000 > 269999$
 (e) $812100 < 900003$ (f) $599099 > 587130$
 (g) $990032 > 320099$ (h) $443121 > 314349$
2. (a) 939389 (b) 858486
 (c) 345175 (d) 39393
3. (a) 39645 (b) 984181
 (c) 745562 (d) 843942
4. (a) 9876, 8678, 999, 4567, 89 and 1843

T.th	Th	H	T	O		T.th	Th	H	T	O
	9	8	7	6					8	9
	8	6	7	8				9	9	9
		9	9	9	=		1	8	4	3
	4	5	6	7			4	5	6	7
			8	9			8	6	7	8
	1	8	4	3			9	8	7	6

So, ascending order = 89, 999, 1843, 4567, 8678, 9876

(b)

T.th	Th	H	T	O
	7	7	7	7
6	6	6	6	6
		8	8	8
				9
9	0	0	0	0

=

T.th	Th	H	T	O
				9
		8	8	8
	7	7	7	7
6	6	6	6	6
9	0	0	0	0

So, ascending order 9, 888, 7777, 66666, 90000

(c)

Lakh	T.th	Th	H	T	O
1	0	0	0	0	0
8	9	4	3	2	1
	9	8	8	8	8
	5	4	6	0	0
	1	0	1	0	1

=

Lakh	T.th	Th	H	T	O
	1	0	1	0	1
	5	4	6	0	0
	9	8	8	8	8
1	0	0	0	0	0
8	9	4	3	2	1

So, ascending order 10101, 54600, 98888, 100000, 894321

5. (a) 399931, 932993, 854431, 743539

Lakh	T.th	Th	H	T	O
3	9	9	9	3	1
9	3	2	9	9	3
8	5	4	4	3	1
7	4	3	5	3	9

=

Lakh	T.th	Th	H	T	O
9	3	2	9	9	3
8	5	4	4	3	1
7	4	3	5	3	9
3	9	9	9	3	1

So, descending order = 932993, 854431, 743539, 399931

(b) 851134, 663244, 333249, 778593

Lakh	T.th	Th	H	T	O
8	5	1	1	3	4
6	6	3	2	4	4
3	3	3	2	4	9
7	7	8	5	9	3

=

Lakh	T.th	Th	H	T	O
8	5	1	1	3	4
7	7	8	5	9	3
6	6	3	2	4	4
3	3	3	2	4	9

So, descending order = 851134, 778593, 663244, 333249

(c) 845543, 288495, 399949, 656474

Lakh	T.th	Th	H	T	O		Lakh	T.th	Th	H	T	O
8	4	5	5	4	3		8	4	5	5	4	3
2	8	8	4	9	5	=	6	5	6	4	7	4
3	9	9	9	4	9		3	9	9	9	4	9
6	5	6	4	7	4		2	8	8	4	9	5

So, descending order = 845543, 656474, 399949, 288495

6. 30689 7. 304589 8. 985430 9. 9765420
10. 675, 657, 765, 756, 567, 576

I. Mental Maths

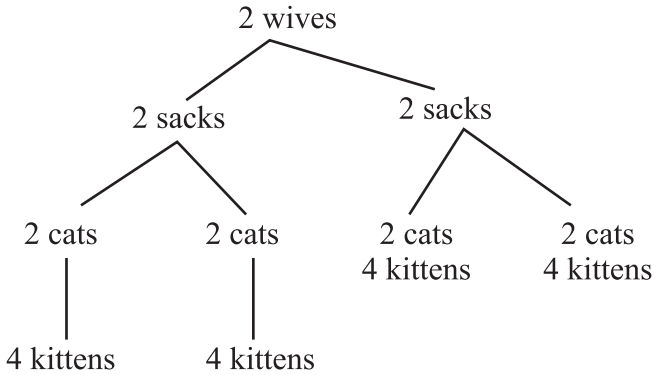
- Indian system — 64,34,680
Sixty four lakh thirty four thousand six hundred eighty
55,66,770 — Fifty-five lakh sixty six thousand seven hundred seventy.
- International system — 6,434,680
Six million four hundred thirty four thousand six hundred eighty
5,566,770 — Five million five hundred sixty six thousand seven hundred seventy.
- Highest — 9804; Lowest — 4809
Two other numbers — 8409, 4908
- Indian System — 5,69,007; 9,00,645
International System — 569,007; 900,645
- (a) $3,56,789 = 300000 + 50000 + 6000 + 700 + 80 + 9$
(b) $54700 = 50000 + 4000 + 700 + 00 + 0$
- (a) 5,00,230 (b) 32,657
- (a) $2,00,269 = 2,00,000$ or 2 lakhs, 200 or 2 hundred
(b) $1,20,702 = 20,000$ or 2 ten thousands, 2 or 2 ones
(c) $2,26,381 = 20,00,000$ or 2 lakh;
20,000 or 2 ten thousand
- (a) 501 tens (b) 910 tens

(c) 5 thousands

Multiple Choice Questions (M.C.Q.)

1. (i) 1 lakh 2. (ii) 800 3. (iii) 13089 4. (i) 78,587
5. (i) 9,99,998 6. (iii) 5 7. (ii) 1
8. (iii) 86,400

Activity Time



So, total or in all = 30

2. (a) 2 digits = $99 - 9 = 90$ (b) 3 digits = $999 - 99 = 900$
(c) 4 digits = $9999 - 999 = 9000$

3

Addition of Numbers

Exercise 4

$$\begin{array}{r} 1. \quad \quad \quad 5 \ 3 \ 4 \ 3 \ 2 \\ + \quad \quad 4 \ 5 \ 3 \ 6 \ 7 \\ \hline \quad \quad 9 \ 8 \ 7 \ 9 \ 9 \end{array}$$

$$\begin{array}{r} 3. \quad \quad \quad 8 \ 5 \ 6 \ 1 \ 1 \\ + \quad \quad 1 \ 3 \ 2 \ 7 \ 8 \\ \quad \quad \quad 1 \ 1 \ 0 \ 0 \\ \hline \quad \quad 9 \ 9 \ 9 \ 8 \ 9 \end{array}$$

$$\begin{array}{r} 5. \quad \quad \quad 7 \ 1 \ 2 \ 3 \ 4 \ 5 \\ + \quad \quad 2 \ 8 \ 7 \ 4 \ 5 \ 4 \\ \hline \quad \quad 9 \ 9 \ 9 \ 7 \ 9 \ 9 \end{array}$$

$$\begin{array}{r} 7. \quad \quad \quad 8 \ 2 \ 0 \ 5 \ 4 \ 3 \\ + 1 \ 3 \ 8 \ 1 \ 3 \ 2 \\ \quad \quad \quad 4 \ 1 \ 2 \ 2 \ 3 \\ \hline \quad \quad 9 \ 9 \ 9 \ 8 \ 9 \ 8 \end{array}$$

$$\begin{array}{r} 9. \quad \quad \quad 6 \ 2 \ 4 \ 3 \ 5 \ 1 \\ + \quad \quad 3 \ 2 \ 5 \ 4 \ 2 \\ \quad \quad \quad 3 \ 2 \ 1 \ 0 \ 6 \\ \hline \quad \quad 6 \ 8 \ 8 \ 9 \ 9 \ 9 \end{array}$$

$$\begin{array}{r} 11. \quad \quad \quad 3 \ 2 \ 5 \ 7 \ 1 \\ + \quad \quad 2 \ 3 \ 2 \ 1 \ 0 \\ \quad \quad \quad 2 \ 4 \ 2 \ 1 \ 8 \\ \hline \quad \quad 7 \ 9 \ 9 \ 9 \ 9 \end{array}$$

$$\begin{array}{r} 2. \quad \quad \quad 9 \ 8 \ 7 \ 2 \ 6 \\ + \quad \quad 1 \ 1 \ 7 \ 3 \\ \hline \quad \quad 9 \ 9 \ 8 \ 9 \ 9 \end{array}$$

$$\begin{array}{r} 4. \quad \quad \quad 3 \ 2 \ 6 \ 2 \ 3 \\ + \quad \quad 3 \ 3 \ 2 \ 5 \ 1 \\ \quad \quad \quad 4 \ 1 \ 2 \ 5 \\ \hline \quad \quad 6 \ 9 \ 9 \ 9 \ 9 \end{array}$$

$$\begin{array}{r} 6. \quad \quad \quad 7 \ 1 \ 9 \ 2 \ 8 \ 6 \\ + 2 \ 8 \ 0 \ 6 \ 0 \ 3 \\ \hline \quad \quad 9 \ 9 \ 9 \ 8 \ 8 \ 9 \end{array}$$

$$\begin{array}{r} 8. \quad \quad \quad 6 \ 2 \ 3 \ 2 \ 5 \ 1 \\ + 1 \ 4 \ 5 \ 6 \ 3 \ 0 \\ \quad \quad \quad 3 \ 0 \ 1 \ 1 \ 5 \\ \hline \quad \quad 7 \ 9 \ 8 \ 9 \ 9 \ 6 \end{array}$$

$$\begin{array}{r} 10. \quad \quad \quad 6 \ 2 \ 3 \ 7 \ 1 \\ + \quad \quad 2 \ 1 \ 5 \ 1 \ 7 \\ \quad \quad \quad 4 \ 1 \ 1 \ 0 \\ \hline \quad \quad 8 \ 7 \ 9 \ 9 \ 8 \end{array}$$

$$\begin{array}{r} 12. \quad \quad \quad 5 \ 2 \ 4 \ 3 \ 2 \ 2 \\ + 2 \ 1 \ 3 \ 2 \ 4 \ 5 \\ \quad \quad \quad 6 \ 2 \ 4 \ 3 \ 2 \\ \hline \quad \quad 7 \ 9 \ 9 \ 9 \ 9 \ 9 \end{array}$$

$$\begin{array}{r}
 13. \quad \quad 3 \ 2 \ 5 \ 4 \ 1 \\
 \quad \quad + \quad 2 \ 3 \ 4 \ 0 \ 7 \\
 \quad \quad \quad 4 \ 0 \ 3 \ 1 \\
 \hline
 \quad \quad 5 \ 9 \ 9 \ 7 \ 9 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 14. \quad \quad 2 \ 3 \ 4 \ 5 \ 6 \ 7 \\
 \quad \quad + \quad 3 \ 2 \ 2 \ 2 \ 1 \ 0 \\
 \quad \quad \quad 4 \ 3 \ 1 \ 1 \ 2 \\
 \hline
 \quad \quad 5 \ 9 \ 9 \ 8 \ 8 \ 9 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 15. \quad \quad 2 \ 1 \ 2 \ 0 \ 5 \\
 \quad \quad \quad 2 \ 4 \ 2 \ 2 \ 0 \\
 \quad \quad + \quad 1 \ 0 \ 1 \ 1 \ 0 \\
 \hline
 \quad \quad 5 \ 5 \ 5 \ 3 \ 5 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 16. \quad \quad 1 \ 2 \ 1 \ 3 \ 1 \ 5 \\
 \quad \quad + \quad 2 \ 2 \ 2 \ 3 \ 2 \ 0 \\
 \quad \quad \quad 1 \ 0 \ 1 \ 1 \ 0 \\
 \hline
 \quad \quad 3 \ 5 \ 3 \ 7 \ 4 \ 5 \\
 \hline
 \end{array}$$

Exercise 5

$$\begin{array}{r}
 1. \quad \quad 1 \quad 1 \ 1 \ 1 \\
 \quad \quad 7 \ 5 \ 4 \ 3 \ 2 \ 1 \\
 \quad \quad 9 \ 5 \ 2 \ 9 \ 9 \ 7 \\
 + \quad 3 \ 9 \ 2 \ 1 \ 4 \ 8 \\
 \hline
 \quad 2 \ 0 \ 9 \ 9 \ 4 \ 6 \ 6 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 2. \quad \quad 2 \ 1 \ 1 \ 2 \ 1 \\
 \quad \quad 9 \ 9 \ 2 \ 2 \ 9 \ 3 \\
 \quad \quad 7 \ 4 \ 7 \ 5 \ 9 \ 0 \\
 + \quad 2 \ 8 \ 9 \ 2 \ 7 \ 9 \\
 \hline
 \quad 2 \ 0 \ 2 \ 9 \ 1 \ 6 \ 2 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 3. \quad \quad 2 \ 2 \ 2 \ 2 \ 2 \\
 \quad \quad 3 \ 4 \ 3 \ 5 \ 3 \ 6 \\
 \quad \quad \quad 4 \ 7 \ 4 \ 5 \ 6 \\
 \quad \quad 4 \ 8 \ 4 \ 5 \ 9 \ 9 \\
 + \quad 7 \ 7 \ 4 \ 5 \ 3 \\
 \hline
 \quad 9 \ 5 \ 3 \ 0 \ 4 \ 4 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 4. \quad \quad 1 \ 3 \ 3 \ 2 \\
 \quad \quad \quad 8 \ 8 \ 3 \\
 \quad \quad \quad 1 \ 8 \ 9 \ 9 \\
 \quad \quad 2 \ 3 \ 5 \ 7 \ 8 \\
 + \quad 3 \ 4 \ 7 \ 9 \ 7 \\
 \hline
 \quad 6 \ 1 \ 1 \ 5 \ 7 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 5. \quad \quad 1 \ 1 \ 3 \ 2 \ 2 \\
 \quad \quad 8 \ 4 \ 1 \ 5 \ 1 \ 6 \\
 \quad \quad 3 \ 4 \ 1 \ 7 \ 1 \ 8 \\
 \quad \quad \quad 5 \ 9 \ 9 \ 7 \ 3 \\
 + \quad \quad 2 \ 9 \ 9 \ 8 \\
 \hline
 \quad 1 \ 2 \ 4 \ 6 \ 2 \ 0 \ 5 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 6. \quad \quad 1 \ 1 \ 2 \ 1 \ 2 \\
 \quad \quad 4 \ 2 \ 4 \ 3 \ 4 \ 5 \\
 \quad \quad 7 \ 5 \ 7 \ 6 \ 7 \ 7 \\
 \quad \quad 1 \ 6 \ 1 \ 7 \ 1 \ 8 \\
 + \quad \quad 9 \ 1 \ 8 \\
 \hline
 \quad 1 \ 3 \ 4 \ 4 \ 6 \ 5 \ 8 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 7. \quad \begin{array}{r}
 1\ 1\ 1\ 1\ 1 \\
 3\ 4\ 5\ 6\ 7\ 8 \\
 4\ 7\ 6\ 5\ 1 \\
 +\ 2\ 3\ 5\ 3\ 9 \\
 \hline
 4\ 1\ 6\ 8\ 6\ 8
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 9. \quad \begin{array}{r}
 1\ 3\ 1 \\
 5\ 4\ 9\ 2\ 7 \\
 4\ 5\ 6\ 0\ 8 \\
 8\ 0\ 9\ 1\ 0 \\
 +\ 7\ 0\ 8\ 5\ 1 \\
 \hline
 2\ 5\ 2\ 2\ 9\ 6
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 11. \quad \begin{array}{r}
 3\ 2\ 2\ 2 \\
 7\ 4\ 9\ 3\ 9 \\
 3\ 7\ 2\ 2\ 5 \\
 2\ 9\ 8\ 4\ 7 \\
 +\ 9\ 9\ 2\ 9\ 3 \\
 \hline
 2\ 4\ 1\ 3\ 0\ 4
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 13. \quad \begin{array}{r}
 1\ 1\ 2\ 2 \\
 3\ 2\ 1\ 9\ 9 \\
 4\ 3\ 4\ 7\ 5 \\
 8\ 5\ 9\ 1\ 9 \\
 +\ 3\ 3\ 3\ 2\ 4 \\
 \hline
 1\ 9\ 4\ 9\ 1\ 7
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 8. \quad \begin{array}{r}
 1\ 1\ 1\ 1\ 1 \\
 2\ 4\ 3\ 1\ 9\ 7 \\
 9\ 3\ 1\ 5\ 4\ 5 \\
 +\ 7\ 2\ 6\ 5\ 3\ 1 \\
 \hline
 1\ 9\ 0\ 1\ 2\ 7\ 2
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 10. \quad \begin{array}{r}
 1\ 1\ 1\ 1 \\
 4\ 3\ 2\ 1\ 2 \\
 3\ 2\ 4\ 1\ 9 \\
 9\ 8\ 8\ 5\ 1 \\
 +\ 3\ 3\ 2\ 2\ 5 \\
 \hline
 2\ 0\ 7\ 7\ 0\ 7
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 12. \quad \begin{array}{r}
 2\ 1\ 2\ 2 \\
 8\ 5\ 3\ 1\ 9 \\
 5\ 5\ 2\ 9\ 5 \\
 1\ 9\ 2\ 9\ 9 \\
 +\ 4\ 4\ 4\ 5\ 3 \\
 \hline
 2\ 0\ 4\ 3\ 6\ 6
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 14. \quad \begin{array}{r}
 1\ 1\ 2\ 2\ 1 \\
 1\ 6\ 2\ 8\ 9\ 5 \\
 4\ 3\ 8\ 3\ 7\ 1 \\
 +\ 3\ 8\ 4\ 7\ 9\ 7 \\
 \hline
 9\ 8\ 6\ 0\ 6\ 3
 \end{array}
 \end{array}$$

Exercise 6

$$\begin{array}{rcl}
 1. \text{ In a town} & \text{Males} & = 35497 \\
 & \text{Females} & = 49393 \\
 & \text{Total population} & = \underline{84890}
 \end{array}$$

Total population of the town = 84890.

2. In a bank

$$1 \text{ deposited} = ₹ 89298$$

$$2 \text{ deposited} = ₹ 95394$$

$$\text{Total amount deposited} = \underline{184692}$$

Total amount deposited in bank = ₹ 184692

3. People watched the match on

$$\text{Friday} = 44572$$

$$\text{Saturday} = 38785$$

$$\text{Sunday} = 45295$$

$$\text{Total viewers in 3 days} = \underline{128652}$$

In 3 days total people watched match are 128652.

$$4. \text{ Greatest 5 digit number} = 99999$$

$$\text{Greatest 6 digit number} = 999999$$

$$\text{Sum} = \underline{1099998}$$

Sum = 1099998

5. Persons visited Mussoorie in

$$\text{May} = 44948$$

$$\text{June} = 48398$$

$$\text{Total persons visited} = \underline{93346}$$

In two months total persons visited = 93346 persons.

$$6. \text{ The required number} = \begin{array}{r} 9 \ 1 \ 4 \ 0 \ 2 \ 5 \\ + \quad \quad 2 \ 5 \ 7 \ 7 \\ \hline 9 \ 1 \ 6 \ 6 \ 0 \ 2 \end{array}$$

7. In football match spectators in

$$\text{Ist row} = 21932$$

$$\text{2nd row} = 34259$$

$$\text{3rd row} = 43245$$

$$\text{Total spectators} = \underline{99436}$$

So, there are 99436 spectators.

8. A granary has

Basmati rice	=	3 2 9 3 5
Ordinary rice	=	7 6 9 9 9
Wheat	=	3 8 9 3 5
Total grain	=	<u>1 4 8 8 6 9</u>

Granary has 148869 kg grains.

9. A library has books

Hindi	=	2 9 2 9 8
English	=	+ 3 5 9 4 5
Maths	=	+ 8 7 6 8
		<u>7 4 0 1 1</u>

Total books = 74011

10. A man has

Land	=	₹ 3 2 3 4 4 5
Building cost	=	₹ 3 7 5 8 9 5
		<u>₹ 6 9 9 3 4 0</u>

Total cost = ₹699340

11. In an election votes polled

4	8	5	8	2
5	7	4	5	2
+	5	2	2	5
				9
1	5	8	2	9
				3

Total votes polled altogether = 158293 votes.

12. Person visited in book fair

Sunday	=	4 4 3 9 8
Monday	=	3 9 2 7 8
Tuesday	=	2 7 3 7 5
		<u>1 1 1 0 5 1</u>

persons

13. In a town

Men	=	85349
Women	=	75289
Children	=	39872
		<u>200510</u>

Total population = 200510

14. Difference 38493

Smaller Number + 45285

Other Number 83778

15. Ist rolls of wire measure = 25277

IInd roll of wire measure = 38215

IIIrd roll of wire measure = 43523

IVth roll of wire measure = 19395

Total Length = 126410 Metres

4

Subtraction of Number

Exercise 8

$$\begin{array}{r} 1. \quad 43732 \\ - \quad 23622 \\ \hline 20110 \end{array}$$

$$\begin{array}{r} 2. \quad 54533 \\ - \quad 23321 \\ \hline 31212 \end{array}$$

$$\begin{array}{r} 3. \quad 57455 \\ - \quad 24321 \\ \hline 33134 \end{array}$$

$$\begin{array}{r} 4. \quad 89987 \\ - \quad 34567 \\ \hline 55420 \end{array}$$

$$\begin{array}{r} 5. \quad 76689 \\ - \quad 34455 \\ \hline 42234 \end{array}$$

$$\begin{array}{r} 6. \quad 69339 \\ - \quad 47212 \\ \hline 22127 \end{array}$$

$$\begin{array}{r} 7. \quad 85867 \\ - \quad 54756 \\ \hline 31111 \end{array}$$

$$\begin{array}{r} 8. \quad 99099 \\ - \quad 45067 \\ \hline 54032 \end{array}$$

$$\begin{array}{r} 9. \quad 74943 \\ - \quad 62721 \\ \hline 12222 \end{array}$$

$$\begin{array}{r} 10. \quad 99987 \\ - \quad 63754 \\ \hline 36233 \end{array}$$

$$\begin{array}{r} 11. \quad 92932 \\ - \quad 61512 \\ \hline 31420 \end{array}$$

$$\begin{array}{r} 12. \quad 85869 \\ - \quad 74735 \\ \hline 11134 \end{array}$$

$$\begin{array}{r}
 13. \quad \begin{array}{r} 78579 \\ - 66465 \\ \hline 12114 \end{array}
 \end{array}$$

$$\begin{array}{r}
 14. \quad \begin{array}{r} 96798 \\ - 52374 \\ \hline 44424 \end{array}
 \end{array}$$

$$\begin{array}{r}
 15. \quad \begin{array}{r} 98765 \\ - 66653 \\ \hline 32112 \end{array}
 \end{array}$$

$$\begin{array}{r}
 16. \quad \begin{array}{r} 776655 \\ - 343343 \\ \hline 433312 \end{array}
 \end{array}$$

Exercise 8

$$\begin{array}{r}
 1. \quad \begin{array}{r} 64955 \\ - 58976 \\ \hline 05979 \end{array}
 \end{array}$$

$$\begin{array}{r}
 2. \quad \begin{array}{r} 45785 \\ - 6549 \\ \hline 39236 \end{array}
 \end{array}$$

$$\begin{array}{r}
 3. \quad \begin{array}{r} 99643 \\ - 29728 \\ \hline 69915 \end{array}
 \end{array}$$

$$\begin{array}{r}
 4. \quad \begin{array}{r} 99865 \\ - 39846 \\ \hline 60019 \end{array}
 \end{array}$$

$$\begin{array}{r}
 5. \quad \begin{array}{r} 52545 \\ - 48796 \\ \hline 03749 \end{array}
 \end{array}$$

$$\begin{array}{r}
 6. \quad \begin{array}{r} 29301 \\ - 19285 \\ \hline 10016 \end{array}
 \end{array}$$

$$\begin{array}{r}
 7. \quad \begin{array}{r} 70000 \\ - 66394 \\ \hline 03606 \end{array}
 \end{array}$$

$$\begin{array}{r}
 8. \quad \begin{array}{r} 60000 \\ - 33343 \\ \hline 26657 \end{array}
 \end{array}$$

$$\begin{array}{r}
 9. \quad \begin{array}{r} 89200 \\ - 63330 \\ \hline 25870 \end{array}
 \end{array}$$

$$\begin{array}{r}
 10. \quad \begin{array}{r} 30000 \\ - 63879 \\ \hline 236121 \end{array}
 \end{array}$$

Exercise 9

1. Rahul

$$\text{Deposited} = ₹ 65812$$

$$\text{Withdrew} = ₹ 46935$$

$$\text{Balance amount} = \underline{₹ 18877}$$

$$2. \text{ Sum} = 524567$$

$$\text{Smaller number} = -86578$$

$$\text{Other number} = \underline{437989}$$

Other number is 437989

$$3. \text{ Total eggs} = 352870$$

$$\text{Sent to market} = -131567$$

$$\text{Remaining} = \underline{221303}$$

$$4. \text{ Greater number} = 823456$$

$$\text{Difference} = -53432$$

$$\underline{770024}$$

Smaller number = 770024

$$5. \text{ Total wheat} = 87530$$

$$1 \text{ day sold} = -18420$$

$$\text{Remaining} = \underline{69110} \text{ kg}$$

$$\text{Remaining} = 69110$$

$$1 \text{nd day sold} = -25620$$

$$\underline{43490} \text{ kg}$$

Wheat left after 2nd day stock is 43490 kg.

$$6. \quad \begin{array}{r} 52110 \\ - 22331 \\ \hline 29779 \end{array}$$

Number 29779 is 22331 less than 52110.

$$7. \quad \begin{array}{r} 98325 \\ - 59436 \\ \hline 38889 \end{array}$$

The number is 38899 greater than 59436

$$\begin{array}{rcl}
 8. \text{ Ajay had} & = & ₹96630 \\
 \text{Buy motorcycle} & = & ₹43999 \\
 \text{Remaining} & = & \underline{₹52631} \\
 \text{Remaining} & = & ₹52631 \\
 \text{buy refrigerator} & = & - ₹7535 \\
 \text{at last left amount} & = & \underline{₹45096}
 \end{array}$$

$$\begin{array}{r}
 9. \quad \quad 7 \ 8 \ 6 \ 5 \ 3 \\
 - \quad 4 \ 3 \ 2 \ 4 \ 2 \\
 \hline
 \quad \quad 3 \ 5 \ 4 \ 1 \ 1
 \end{array}$$

35411 is added to 43242 to get 78653.

$$\begin{array}{r}
 10. \quad \quad 7 \ 6 \ 7 \ 5 \ 0 \\
 - \quad 5 \ 6 \ 5 \ 7 \ 2 \\
 \hline
 \quad \quad 2 \ 0 \ 1 \ 7 \ 8
 \end{array}$$

$$\begin{array}{rcl}
 11. \text{ Total population} & = & 82109 \\
 \text{Males} & = & -59934 \\
 & \text{Females} & = \underline{22175}
 \end{array}$$

So, there were 22175 females.

$$\begin{array}{r}
 12. \text{ As Ist candidate won by} \\
 \quad \quad 4 \ 5 \ 2 \ 9 \ 0 \\
 - \quad 4 \ 2 \ 3 \ 1 \ 5 \\
 \hline
 \quad \quad 2 \ 9 \ 7 \ 5
 \end{array}$$

$$\begin{array}{rcl}
 13. \text{ Flat costs} & = & ₹851300 \\
 \text{Mr. Jain has} & = & -₹707875 \\
 \text{Money needed} & = & \underline{₹143425} \\
 14. \text{ Total milk} & = & 60000 \\
 \text{Supplied to 1st depot} & = & -39285 \\
 \text{Remaining} & = & \underline{20715 \text{ litre}}
 \end{array}$$

$$\begin{array}{r}
 \text{Remaining} \quad \quad \quad = \quad 20715 \\
 \text{Supplied to IInd depot} = \quad -10382 \\
 \hline
 \quad \quad \quad \quad \quad \quad 10333 \text{ litre}
 \end{array}$$

Milk left in dairy 10333 litre.

5

Multiplication of Numbers

Exercise 10

1. Multiply :

- | | |
|---|---|
| (a) 215 by 4 = 860 | (b) 206 by 5 = 1030 |
| (c) 184 by 3 = 552 | (d) 506 by 6 = 3036 |
| (e) 394 by 7 = 2758 | (f) 613 by 8 = 4904 |
| 2. (a) $16 \times 8 = 128$ | (b) $18 \times 11 = 198$ |
| (c) $9 \times 17 = 153$ | (d) $1530 \times 1 = 1530$ |
| (e) $1405 \times 0 = 0$ | (f) $0 \times 1301 = 0$ |
| (g) $14 \times 2 \times 1 = 28$ | (h) $1150 \times 1 = 1150$ |
| (i) $209 \times 1 = 209$ | |
| 3. (a) $15 \times 19 = 19 \times 15$ | (b) $96 \times 7 = 7 \times 96$ |
| (c) $8 \times (4 \times 3) = (8 \times 4) \times 3$ | (d) $(14 \times 7 \times 25) = 14 \times 7 \times 25$ |

Exercise 11

- $48 \times 10 = 48 \times \text{tens} = 48 \text{ tens} = 480$
- $32 \times 100 = 32 \times \text{hundred} = 3200$
- $16 \times 400 = 16 \times 4 \text{ hundred} = 6400$
- $212 \times 100 = 212 \times \text{hundred} = 21200$
- $3125 \times 1000 = 3125 \times \text{thousand} = 3125000$
- $605 \times 8000 = 605 \times 8 \text{ thousand} = 4840000$
- $101 \times 3000 = 101 \times 3 \text{ thousand} = 303000$
- $708 \times 500 = 708 \times 5 \text{ hundred} = 354000$

9. $342 \times 9000 = 342 \times 9 \text{ thousand} = 3078000$
10. $443 \times 7000 = 443 \times 7 \text{ thousand} = 3101000$
11. $803 \times 6000 = 804 \times 6 \text{ thousand} = 4818000$
12. $888 \times 2000 = 888 \times 2 \text{ thousand} = 1776000$
13. $242 \times 10 = 2420$
14. $254 \times 100 = 25400$
15. $195 \times 1000 = 195000$

Exercise 12

$$\begin{array}{r}
 1. \quad \quad 235 \\
 \quad \times 16 \\
 \hline
 \quad 1410 \\
 \quad 2350 \\
 \hline
 \quad 3760
 \end{array}$$

$$\begin{array}{r}
 2. \quad \quad 475 \\
 \quad \times 25 \\
 \hline
 \quad 2375 \\
 \quad 9500 \\
 \hline
 \quad 11875
 \end{array}$$

$$\begin{array}{r}
 3. \quad \quad 418 \\
 \quad \times 42 \\
 \hline
 \quad 836 \\
 \quad 16720 \\
 \hline
 \quad 17556
 \end{array}$$

$$\begin{array}{r}
 4. \quad \quad 256 \\
 \quad \times 18 \\
 \hline
 \quad 2048 \\
 \quad 2560 \\
 \hline
 \quad 4608
 \end{array}$$

$$\begin{array}{r}
 5. \quad \quad 1218 \\
 \quad \times 24 \\
 \hline
 \quad 4872 \\
 \quad 24360 \\
 \hline
 \quad 29232
 \end{array}$$

$$\begin{array}{r}
 6. \quad \quad 3124 \\
 \quad \times 55 \\
 \hline
 \quad 15620 \\
 \quad 156200 \\
 \hline
 \quad 171820
 \end{array}$$

$$\begin{array}{r}
 7. \quad \quad 212 \\
 \quad \times 253 \\
 \hline
 \quad 636 \\
 \quad 10600 \\
 \quad 42400 \\
 \hline
 \quad 53636
 \end{array}$$

$$\begin{array}{r}
 8. \quad \quad 262 \\
 \quad \times 153 \\
 \hline
 \quad 786 \\
 \quad 13100 \\
 \quad 26200 \\
 \hline
 \quad 40086
 \end{array}$$

$$\begin{array}{r}
 9. \quad \quad 254 \\
 \quad \times 238 \\
 \hline
 \quad 2032 \\
 \quad 7620 \\
 \quad 50800 \\
 \hline
 \quad 60452
 \end{array}$$

$$\begin{array}{r}
 10. \quad \quad 555 \\
 \quad \times 546 \\
 \hline
 \quad 3330 \\
 \quad 22200 \\
 \quad 277500 \\
 \hline
 \quad 303030
 \end{array}$$

$$\begin{array}{r}
 11. \quad \quad 5474 \\
 \quad \times 240 \\
 \hline
 \quad 0000 \\
 \quad 218960 \\
 \quad 1094800 \\
 \hline
 \quad 1313760
 \end{array}$$

$$\begin{array}{r}
 12. \quad \quad 5760 \\
 \quad \times 140 \\
 \hline
 \quad 0000 \\
 \quad 230400 \\
 \quad 576000 \\
 \hline
 \quad 806400
 \end{array}$$

$$\begin{array}{r}
 13. \quad \quad 4040 \\
 \quad \times 133 \\
 \hline
 \quad 12120 \\
 \quad 121200 \\
 \quad 404000 \\
 \hline
 \quad 537320
 \end{array}$$

$$\begin{array}{r}
 14. \quad \quad 4990 \\
 \quad \times 356 \\
 \hline
 \quad 29940 \\
 \quad 249500 \\
 \quad 1497000 \\
 \hline
 \quad 1776440
 \end{array}$$

$$\begin{array}{r}
 15. \quad \quad 1321 \\
 \quad \times 3214 \\
 \hline
 \quad 5284 \\
 \quad 13210 \\
 \quad 264200 \\
 \quad 3963000 \\
 \hline
 \quad 4245694
 \end{array}$$

Exercise 13

- 1 packet contains = 144 sheets
25 packet contains = 144×25

$$\begin{array}{r}
 144 \\
 \times 25 \\
 \hline
 720 \\
 2880 \\
 \hline
 3600
 \end{array}$$

2. Total students = 1154

Each pays = ₹350

$$\begin{array}{r}
 1154 \\
 \times 350 \\
 \hline
 0000 \\
 57700 \\
 346200 \\
 \hline
 403900
 \end{array}$$

Total monthly collection = 403900

3. A truck loaded with 2750 bricks

235 such truck has

$$\begin{array}{r}
 2750 \\
 \times 235 \\
 \hline
 13750 \\
 82500 \\
 550000 \\
 \hline
 646250
 \end{array}$$

So there are 646250 bricks loaded in 235 such trucks.

4. Days in June = 30 days

1 day = 24 hours

Hours in month of June

$$\begin{array}{r}
 24 \\
 \times 30 \\
 \hline
 00 \\
 720 \\
 \hline
 720
 \end{array}$$

5. 1 box contains = 98 kg wheat
weight of such 188 boxes =

$$\begin{array}{r}
 188 \\
 \times 98 \\
 \hline
 1504 \\
 16920 \\
 \hline
 18424
 \end{array}$$

6. 1 day production = 309 mobile
In 275 days =

$$\begin{array}{r}
 309 \\
 \times 275 \\
 \hline
 1545 \\
 21630 \\
 61800 \\
 \hline
 84975
 \end{array}$$

In 275 days 84975 mobile set were produced.

7. Loaves produced in 1 day = 1657 loaves
1 year Or 365 days =

$$\begin{array}{r}
 1657 \\
 \times 365 \\
 \hline
 8285 \\
 99420 \\
 497100 \\
 \hline
 604805
 \end{array}$$

In 1 year 604805 loaves
were produced.

8. 1 cartoon has 25 copies.

Copies of different books = 16

Total book in 1 cartoon =

$$\begin{array}{r}
 25 \\
 \times 16 \\
 \hline
 150 \\
 250 \\
 \hline
 400
 \end{array}$$

So, the truck has books = 160×400

= 64000 books

6

Division of Numbers

Exercise 12

$$\begin{array}{r}
 1. \quad 8 \overline{) 909} 113 \\
 \underline{8} \\
 10 \\
 \underline{8} \\
 29 \\
 \underline{24} \\
 5
 \end{array}$$

Check :

Divisor $\times$ Quotient + Remainder

$$8 \times 113 + 5 = 909$$

$$\begin{array}{r}
 2. \quad 6 \overline{) 864} 144 \\
 \underline{6} \\
 26 \\
 \underline{24} \\
 24 \\
 \underline{24} \\
 \times
 \end{array}$$

Check :

Divisor $\times$ Quotient + Remainder

$$6 \times 144 + 0 = 864$$

$$\begin{array}{r}
 3. \quad 3 \overline{) 810} 270 \\
 \underline{6} \\
 21 \\
 \underline{21} \\
 0 \\
 0 \\
 \underline{0} \\
 \times
 \end{array}$$

Check :

Divisor $\times$ Quotient + Remainder

$$3 \times 270 + 0 = 810$$

$$\begin{array}{r}
 4. \quad 8 \overline{) 7380} \overline{) 922} \\
 \underline{72} \\
 18 \\
 \underline{16} \\
 20 \\
 \underline{16} \\
 4
 \end{array}$$

Check :

Divisor $\times$ Quotient + Remainder

$$8 \times 922 + 4 = 7380$$

$$\begin{array}{r}
 5. \quad 5 \overline{) 2055} \overline{) 411} \\
 \underline{20} \\
 5 \\
 \underline{5} \\
 5 \\
 \underline{5} \\
 \times
 \end{array}$$

Check :

Divisor $\times$ Quotient + Remainder

$$53 \times 411 + 0 = 2055$$

$$\begin{array}{r}
 6. \quad 9 \overline{) 2714} \overline{) 301} \\
 \underline{27} \\
 14 \\
 \underline{9} \\
 5
 \end{array}$$

Check :

Divisor $\times$ Quotient + Remainder

$$9 \times 301 + 5 = 2714$$

$$\begin{array}{r}
 7. \quad 9 \overline{) 9534} \overline{) 1059} \\
 \underline{9} \\
 5 \\
 \underline{0} \\
 53 \\
 \underline{45} \\
 84 \\
 \underline{81} \\
 3
 \end{array}$$

Check :

Divisor $\times$ Quotient + Remainder

$$9 \times 1059 + 3 = 9534$$

$$\begin{array}{r}
 8. \quad 7 \overline{) 8503} \text{ } 1214 \\
 \underline{7} \\
 15 \\
 \underline{14} \\
 10 \\
 \underline{7} \\
 33 \\
 \underline{28} \\
 5
 \end{array}$$

Check :

Divisor $\times$ Quotient + Remainder

$$7 \times 1214 + 5 = 8503$$

$$\begin{array}{r}
 9. \quad 6 \overline{) 2592} \text{ } 432 \\
 \underline{24} \\
 19 \\
 \underline{18} \\
 12 \\
 \underline{12} \\
 \times
 \end{array}$$

Check :

Divisor $\times$ Quotient + Remainder

$$6 \times 432 + 0 = 2592$$

$$\begin{array}{r}
 10. \quad 7 \overline{) 4158} \text{ } 594 \\
 \underline{35} \\
 65 \\
 \underline{63} \\
 28 \\
 \underline{28} \\
 \times
 \end{array}$$

Check :

Divisor $\times$ Quotient + Remainder

$$7 \times 594 + 0 = 4158$$

$$\begin{array}{r}
 11. \quad 5 \overline{)62215} \underline{)12443} \\
 \underline{5} \\
 12 \\
 \underline{10} \\
 22 \\
 \underline{20} \\
 21 \\
 \underline{20} \\
 15 \\
 \underline{15} \\
 \times \\
 \hline
 \end{array}$$

Check :

Divisor $\times$ Quotient + Remainder

$$5 \times 12443 + 0 = 62215$$

$$\begin{array}{r}
 12. \quad 7 \overline{)25431} \underline{)3633} \\
 \underline{21} \\
 44 \\
 \underline{42} \\
 23 \\
 \underline{21} \\
 21 \\
 \underline{21} \\
 \times \\
 \hline
 \end{array}$$

Check :

Divisor $\times$ Quotient + Remainder

$$7 \times 3633 + 0 = 25431$$

$$\begin{array}{r}
 13. \quad 6 \overline{)71552} \underline{)11925} \\
 \underline{6} \\
 11 \\
 \underline{6} \\
 55 \\
 \underline{54} \\
 15 \\
 \underline{12} \\
 32 \\
 \underline{30} \\
 2 \\
 \hline
 \end{array}$$

Check :

Divisor $\times$ Quotient + Remainder

$$6 \times 11925 + 2 = 71552$$

$$\begin{array}{r}
 14. \quad 5 \overline{)76425} 15285 \\
 \underline{5} \\
 26 \\
 \underline{25} \\
 14 \\
 \underline{10} \\
 42 \\
 \underline{40} \\
 25 \\
 \underline{25} \\
 \times \\
 \hline
 \end{array}$$

Check :

Divisor $\times$ Quotient + Remainder

$$5 \times 15285 + 0 = 76425$$

$$\begin{array}{r}
 15. \quad 6 \overline{)11556} 1926 \\
 \underline{6} \\
 55 \\
 \underline{54} \\
 15 \\
 \underline{12} \\
 36 \\
 \underline{36} \\
 \times \\
 \hline
 \end{array}$$

Check :

Divisor $\times$ Quotient + Remainder

$$6 \times 1926 + 0 = 11556$$

$$16. \quad 251 \div 1 = 251$$

$$17. \quad 645 \div 1 = 645$$

$$18. \quad 1234 \div 1 = 1234$$

$$19. \quad 6015 \div 6015 = 1$$

$$20. \quad 0 \div 2000 = 0$$

$$21. \quad 0 \div 625 = 0$$

Exercise 15

$$\begin{array}{r}
 1. \quad 16 \overline{)484} 30 \\
 \underline{48} \\
 4 \\
 \underline{0} \\
 4 \\
 \hline
 \end{array}$$

$$\text{Check : } 16 \times 30 + 4 = 484$$

$$\begin{array}{r}
 2. \quad 16 \overline{) 819} 51 \\
 \underline{80} \\
 19 \\
 \underline{16} \\
 3
 \end{array}$$

Check : $16 \times 51 + 3 = 819$

$$\begin{array}{r}
 3. \quad 12 \overline{) 957} 79 \\
 \underline{84} \\
 117 \\
 \underline{108} \\
 9
 \end{array}$$

Check : $12 \times 79 + 9 = 957$

$$\begin{array}{r}
 4. \quad 15 \overline{) 850} 56 \\
 \underline{75} \\
 100 \\
 \underline{90} \\
 10
 \end{array}$$

Check : $15 \times 56 + 10 = 850$

$$\begin{array}{r}
 5. \quad 12 \overline{) 1250} 104 \\
 \underline{12} \\
 5 \\
 \underline{0} \\
 50 \\
 \underline{48} \\
 2
 \end{array}$$

Check : $12 \times 104 + 2 = 1250$

$$\begin{array}{r}
 6. \quad 21 \overline{) 7506} \quad 357 \\
 \underline{63} \\
 120 \\
 \underline{105} \\
 156 \\
 \underline{147} \\
 9
 \end{array}$$

Check : $21 \times 357 + 9 = 7506$

$$\begin{array}{r}
 7. \quad 52 \overline{) 9005} \quad 173 \\
 \underline{52} \\
 380 \\
 \underline{364} \\
 165 \\
 \underline{156} \\
 9
 \end{array}$$

Check : $52 \times 173 + 9 = 9005$

$$\begin{array}{r}
 8. \quad 37 \overline{) 5083} \quad 137 \\
 \underline{37} \\
 138 \\
 \underline{111} \\
 273 \\
 \underline{259} \\
 14
 \end{array}$$

Check : $37 \times 137 + 14 = 5083$

$$\begin{array}{r}
 9. \quad 49 \overline{) 8355} \quad 170 \\
 \underline{49} \\
 345 \\
 \underline{343} \\
 25 \\
 \underline{0} \\
 25
 \end{array}$$

Check : $49 \times 170 + 25 = 8355$

$$\begin{array}{r}
 10. \quad 72 \overline{)25542} \overline{)354} \\
 \underline{216} \\
 394 \\
 \underline{360} \\
 342 \\
 \underline{288} \\
 54
 \end{array}$$

Check : $72 \times 354 + 54 = 25542$

$$\begin{array}{r}
 11. \quad 68 \overline{)82576} \overline{)1214} \\
 \underline{68} \\
 145 \\
 \underline{136} \\
 97 \\
 \underline{68} \\
 296 \\
 \underline{272} \\
 24
 \end{array}$$

Check : $68 \times 1214 + 24 = 82576$

$$\begin{array}{r}
 12. \quad 26 \overline{)44152} \overline{)1698} \\
 \underline{26} \\
 181 \\
 \underline{156} \\
 255 \\
 \underline{234} \\
 212 \\
 \underline{208} \\
 4
 \end{array}$$

Check : $26 \times 1698 + 4 = 44152$

$$\begin{array}{r}
 13. \quad 33 \overline{)4639} \overline{)140} \\
 \underline{33} \\
 133 \\
 \underline{132} \\
 19 \\
 \underline{0} \\
 19
 \end{array}$$

Check : $33 \times 140 + 19 = 4639$

$$\begin{array}{r}
 14. \quad 26 \overline{) 4236} 162 \\
 \underline{26} \\
 163 \\
 \underline{156} \\
 76 \\
 \underline{52} \\
 24
 \end{array}$$

Check : $26 \times 162 + 24 = 4236$

$$\begin{array}{r}
 15. \quad 37 \overline{) 3962} 107 \\
 \underline{37} \\
 26 \\
 \underline{0} \\
 262 \\
 \underline{259} \\
 3
 \end{array}$$

Check : $37 \times 107 + 3 = 3962$

$$\begin{array}{r}
 16. \quad 46 \overline{) 8853} 192 \\
 \underline{46} \\
 425 \\
 \underline{414} \\
 113 \\
 \underline{92} \\
 21
 \end{array}$$

Check : $46 \times 192 + 21 = 8853$

$$\begin{array}{r}
 17. \quad 25 \overline{) 8646} 345 \\
 \underline{75} \\
 114 \\
 \underline{100} \\
 146 \\
 \underline{125} \\
 21
 \end{array}$$

Check : $25 \times 345 + 21 = 8646$

$$\begin{array}{r}
 18. \quad 44 \overline{) 9837} \underline{) 223} \\
 \underline{88} \\
 103 \\
 \underline{88} \\
 157 \\
 \underline{132} \\
 25
 \end{array}$$

Check : $44 \times 223 + 25 = 9837$

$$\begin{array}{r}
 19. \quad 75 \overline{) 33198} \underline{) 442} \\
 \underline{300} \\
 319 \\
 \underline{300} \\
 198 \\
 \underline{150} \\
 48
 \end{array}$$

Check : $75 \times 442 + 48 = 33198$

$$\begin{array}{r}
 20. \quad 68 \overline{) 70434} \underline{) 1035} \\
 \underline{68} \\
 24 \\
 \underline{0} \\
 243 \\
 \underline{204} \\
 394 \\
 \underline{340} \\
 54
 \end{array}$$

Check : $68 \times 1035 + 54 = 70434$

$$\begin{array}{r}
 21. \quad 18 \overline{) 96008} \underline{) 5333} \\
 \underline{90} \\
 60 \\
 \underline{54} \\
 60 \\
 \underline{54} \\
 68 \\
 \underline{54} \\
 14
 \end{array}$$

Check : $18 \times 5333 + 14 = 96008$

Exercise 16

1. $8432 \div 10 = Q = 834, R = 2$
2. $816 \div 10 = Q = 81, R = 6$
3. $7321 \div 100 = Q = 73, R = 21$
4. $20042 \div 100 = Q = 200, R = 42$
5. $83061 \div 1000 = Q = 83, R = 61$
6. $6301 \div 1000 = Q = 6, R = 301$
7. $54321 \div 10 = Q = 5432, R = 1$
8. $8007 \div 100 = Q = 80, R = 7$
9. $55913 \div 100 = Q = 559, R = 13$
10. $44946 \div 10 = Q = 4494, R = 6$
11. $31323 \div 1000 = Q = 31, R = 323$
12. $55663 \div 100 = Q = 556, R = 63$

Exercise 17

1. Product of two number is 14049

One number is 21

another number = $14049 \div 21$

$$\begin{array}{r}
 21 \overline{) 14049} 669 \\
 \underline{126} \\
 144 \\
 \underline{126} \\
 189 \\
 \underline{189} \\
 \times \\
 \hline
 \end{array}$$

Another number is 669

2. There are 4368 trees in a rows.

Each row has 13 trees.

Number of rows = $4368 \div 13$

Number of rows = 336

$$\begin{array}{r}
 13 \overline{) 4368} 336 \\
 \underline{39} \\
 46 \\
 \underline{39} \\
 78 \\
 \underline{78} \\
 \times \\
 \hline
 \end{array}$$

3. Total load in 1 truck = 11592 crates
Total crates = 92

$$\begin{array}{r} 92 \overline{) 11592} 126 \\ \underline{92} \\ 239 \\ \underline{184} \\ 552 \\ \underline{552} \\ \hline \times \end{array}$$

So, 126 trucks are needed.

4. 1 packet contains = 24 biscuits
Total biscuits = 35644 biscuits

$$\begin{array}{r} 24 \overline{) 35644} 1485 \\ \underline{24} \\ 116 \\ \underline{96} \\ 204 \\ \underline{192} \\ 124 \\ \underline{120} \\ 4 \end{array}$$

1485 packet are needed and
4 biscuits are left.

5. Total apples = 13612
Distributed among = 43 persons

$$\begin{array}{r} 43 \overline{) 13612} 316 \\ \underline{129} \\ 71 \\ \underline{43} \\ 282 \\ \underline{258} \\ 24 \end{array}$$

So, 316 apples are distributed to
1 person and 24 apples are
remained undivided.

6. Total mangoes = 85394
Found rotten = 221
Packed in boxes = 89 boxes
No. of mangoes in each box are remaining = $85394 - 221$

$$\begin{array}{r} 85394 \\ - 221 \\ \hline 85173 \end{array}$$

$$= 85173 \div 89$$

$$\begin{array}{r} 89 \overline{) 85173} 957 \\ \underline{801} \\ 507 \\ \underline{445} \\ 623 \\ \underline{623} \\ \times \end{array}$$

There are 957 mangoes in each box.

7. Greatest 6-digit number = 999999

Product of $12 \times 8 = 96$

$$\begin{array}{r} 96 \overline{) 999999} 10416 \\ \underline{96} \\ 39 \\ \underline{0} \\ 399 \\ \underline{384} \\ 159 \\ \underline{96} \\ 639 \\ \underline{576} \\ 63 \end{array}$$

Quotient = 10416

Remainder = 63

8. Total money = ₹ 271355

Divided among $4 + 3 = 7$

$$\begin{array}{r} 7 \overline{) 271355} 38765 \\ \underline{21} \\ 61 \\ \underline{56} \\ 53 \\ \underline{49} \\ 45 \\ \underline{42} \\ 35 \\ \underline{35} \\ \times \end{array}$$

Each one get ₹ 38765

Exercise 18

1. Cost of 15 kg vegetable oil = ₹840

Cost of 1 kg vegetable oil = $840 \div 15$

$$\begin{array}{r}
 15 \overline{) 840} \quad 56 \\
 \underline{75} \\
 90 \\
 \underline{90} \\
 \times \\
 \hline
 \end{array}$$

Cost of 1 kg vegetable oil = ₹56

Cost of 5kg vegetable oil = $56 \times 5 = ₹280$

2. Production of 3000 cycles in 12 days.

$$1 \text{ day} = \frac{3000}{12}$$

$$\begin{array}{r}
 12 \overline{) 3000} \quad 250 \\
 \underline{24} \\
 60 \\
 \underline{60} \\
 0 \\
 \hline
 \end{array}$$

So one day 250 cycle were produced.

In 30 days = $250 \times 30 = 7500$ cycles.

3. A box of 12 pencil cost = ₹24

Cost of 1 pencil = $24 \div 12 = 2$ The cost of 144 pencils are = $2 \times 144 = 488$

4. Train fare for 3 passengers = ₹ 540

Train fare for 1 passenger = $540 \div 3$

$$\begin{array}{r}
 3 \overline{) 540} \quad 180 \\
 \underline{3} \\
 24 \\
 \underline{24} \\
 0 \\
 \underline{0} \\
 0 \\
 \underline{0} \\
 \times \\
 \hline
 \end{array}$$

For 1 passenger = ₹180

Train fare for 5 passengers = $5 \times 180 = ₹900$

5. In 5 hour bus covers = 240km

in 1 hour bus cover = $240 \div 5$

$$\begin{array}{r} 5 \overline{) 240} 48 \\ \underline{20} \\ 40 \\ \underline{40} \\ \times \end{array}$$

In 1 hour bus covers = 48 km

In 7 hour bus covers = $48 \times 7 = 336\text{km}$

6. 25 boxes pack = 300 cupplate

1 box packs = $300 \div 25$

$$\begin{array}{r} 25 \overline{) 300} 12 \\ \underline{25} \\ 50 \\ \underline{50} \\ \times \end{array}$$

1 box packs = 12 cup-plates.

20 boxes pack = $20 \times 12 = 240$ cup-plates

7. 45 buses carry = 2340 passengers

1 bus carries = $2340 \div 45$

$$\begin{array}{r} 45 \overline{) 2340} 52 \\ \underline{225} \\ 90 \\ \underline{90} \\ \times \end{array}$$

1 bus carrise = 52 passengers

36 buses carry = $52 \times 36 = 1872$ passengers

8. 18 boys fees = ₹4410

1 boy fee = $4410 \div 18$

$$\begin{array}{r}
 18 \overline{) 4410} \quad 245 \\
 \underline{36} \\
 81 \\
 \underline{72} \\
 90 \\
 \underline{90} \\
 \times \\
 \hline
 \end{array}$$

For 1 boy fee = ₹ 245

For 45 boys = $245 \times 45 = ₹ 11025$

9. 12 dozen pencil cost = ₹ $30 \times 12 = ₹ 360$

10. For 60 quintal load containers needed = 2

For 1 quintal load containers needed = $\frac{2}{60}$

For 18 tonne or 180 quintal load containers needed = $\frac{2}{60} \times \frac{180}{1} = 6$

So, 6 containers are needed.

Test Paper

- I.
 1. (iv) 85000 years old
 2. (iii) 3210 and 1920
 3. 1 bus carry = 48 children
3 buses carry = $48 \times 3 = 152$ childrens; About 150
- II.
 1. (iii) $215 + 185$
 2. (ii) $150 \div 6$
 3. (Ii) $140 - 65$
 4. (iii) $7000 \div 4$
 5. (iii) $60 \div 12$
 6. (ii) $50 + 68 = 118$
 7. (iii) $7986 - 5896 = 4180$
 8. (iii) $132 + (18 \div 2) = 132 + 9 = 141$
 9. (i) Zero
 10. Less than the divisor

Activity Time

1. Bricabad

1000 bricks cost = ₹ 2000

3000 bricks cost = ₹ $2000 \times 3 = ₹ 6000$

Old bricks

$$1000 \text{ brick cost} = 1200$$

$$1 \text{ brick cost} = 1200 \div 1000 = 1.2$$

$$500 \text{ bricks cost} = 1.2 \times 500 = 600$$

2. 183062

Greatest : 863210

Smallest : 102368

$$\text{Sum} = 863210 + 102368$$

$$\text{Sum} = 965578$$

$$\begin{array}{r} \text{Difference} = \quad 863210 \\ - 102368 \\ \hline 760842 \end{array}$$

$$\text{Difference} = 760842$$

8

Multiple and Factors

Exercise 19

1. (a) $3 \times 1 = 3$; $3 \times 2 = 6$; $3 \times 3 = 9$; $3 \times 4 = 12$
3, 6, 9, 12
- (b) $4 \times 1 = 4$; $4 \times 2 = 8$; $4 \times 3 = 12$; $4 \times 4 = 16$
4, 8, 12, 16
- (c) $8 \times 1 = 8$; $8 \times 2 = 16$; $8 \times 3 = 24$; $8 \times 4 = 32$
8, 16, 24, 32
- (d) $13 \times 1 = 13$; $13 \times 2 = 26$; $13 \times 3 = 39$; $13 \times 4 = 52$
13, 26, 39, 52
- (e) $18 \times 1 = 18$; $18 \times 2 = 36$; $18 \times 3 = 54$; $18 \times 4 = 72$
18, 36, 54, 72
2. (a) 6, 12, 18
 $6 \times 4 = 24$; $6 \times 5 = 30$; $6 \times 6 = 36$
- (b) 11, 22, 33
 $11 \times 4 = 44$; $11 \times 5 = 55$; $11 \times 6 = 66$
- (c) 15, 30, 45
 $15 \times 4 = 60$; $15 \times 5 = 75$; $15 \times 6 = 90$
- (d) 19, 38, 57
 $19 \times 4 = 76$; $19 \times 5 = 95$; $19 \times 6 = 114$
3. Multiple of 7 greater than 49 but less than 77.
 $7 \times 7 = 49$; $7 \times 8 = 56$; $7 \times 9 = 63$; $7 \times 10 = 70$; $7 \times 11 = 77$
as 56, 63, 70 are the multiples.
4. $4 \times 3 = 12$ $6 \times 2 = 12$
 $4 \times 6 = 24$ $6 \times 4 = 24$
 $4 \times 9 = 36$ $6 \times 6 = 36$
as 12, 24 are the first two common multiplier of 4 and 6.
5. 24, 48, 72
 $4 \times 6 = 24$ $6 \times 4 = 24$ $8 \times 3 = 24$

$$4 \times 12 = 48$$

$$6 \times 8 = 48$$

$$8 \times 6 = 48$$

$$4 \times 18 = 72$$

$$6 \times 12 = 72$$

$$8 \times 9 = 72$$

6. (a) $36 = \text{even}$

(b) $275 = \text{odd}$

(c) $800 = \text{even}$

(d) $3575 = \text{odd}$

(e) $23746 = \text{even}$

(e) $640231 = \text{odd}$

7. (a) 2

(b) 1

(c) 90

(d) 101

(e) 99

Exercise 20

1. (a) factors

(b) 9 and 8

(c) 54

(d) 11

2. Smallest factor 1 and greatest factor 36.

3. Yes

as

$$\begin{array}{r} 9 \overline{)1089} 121 \\ \underline{9} \\ 18 \\ \underline{18} \\ 9 \\ \underline{9} \\ \times \end{array}$$

As on dividing it is exactly divisible by 9 therefore 9 is a factor of 1089.

4.

$$\begin{array}{r} 19 \overline{)1558} 82 \\ \underline{152} \\ 38 \\ \underline{38} \\ \times \end{array}$$

On dividing 1558 with 19 it is exactly divisible which leaves no remainder.

5. (a) $7 \times 7 = 49$, Yes

(b) $8, 42$ No

(c) $8, 48$ Yes as $8 \times 6 = 48$

6. 160 factors

$16 \times 10 = 160$;

$20 \times 8 = 160$;

$32 \times 5 = 160$;

$40 \times 4 = 160$

As 16, 20, 32, 40 are factor.

7. Factors of 72

1 itself

1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72

$1 \times 72 = 72$; $2 \times 36 = 72$; $3 \times 24 = 72$; $4 \times 18 = 72$; $6 \times 12 = 72$

8. Factors of 108

$1 \times 108 = 108$

$2 \times 54 = 108$

$3 \times 36 = 108$

$4 \times 27 = 108$

$6 \times 18 = 108$

$9 \times 12 = 108$

as 1, 2, 3, 4, 6, 9, 12, 18, 27, 46, 54, 108 are the factor of 108.

9. Greatest factor of 27 is 27.

10. Smallest factor of 36 is 1.

Exercise 21

1. For divisibility of 2, the ones place should be even i.e. 0, 2, 4, 6, 8.

(a) 561 — No

(b) 1524 — Yes

(c) 2724 — Yes

(d) 18658 — Yes

(e) 13479 — No

(f) 75672 — Yes

(g) 10000 — Yes

(h) 33333 — No

2. For divisibility of 10 at the ones place it must be zero.

(a) 70 — Yes

(b) 600 — Yes

(c) 5005 — No

(d) 100003 — No

3. For 5 divisibility of 5 at ones place there must be 5 or zero.

(a) 75 — Yes

(b) 685 — Yes

(c) 400 — Yes

(d) 4002 — No

4. Divisibility of 3 is tested by the sum of the places digit while the sum of digit is divisible by 3 or not.

(a) $5436 = 5 + 4 + 3 + 6 = 18$ — Yes

(b) $5689 = 5 + 6 + 8 + 9 = 28$ — No

(c) $3835 = 3 + 8 + 3 + 5 = 19$ — No

(d) $10101 = 1 + 0 + 1 + 0 + 1 = 3$ — Yes

5. For 2 divisibility — Ones place should be even.

For 3 divisibility — places sum of digit should be the multiple of 3

- (a) 3454
4 is even so divisible by 2.
as $3 + 5 + 4 + 4 = 16$ so it is not divisible by 3 — No.
- (b) 4323
3 is odd so not divisible by 2 — No
- (c) 8007
7 is odd so not divisible by 2 — No
- (d) 5028
8 is even so divisible by 2
as $5 + 0 + 2 + 8 = 15$ so it is divisible by 3 — Yes
6. (a) $4321 \div 10 = Q = 432, R = 1$
So, 1 must be subtracted to make it divisible by 10.
- (b) $35685 \div 10 = Q = 3568, R = 5$
So, 5 must be subtracted.
- (c) $80004 \div 10 = Q = 8000, R = 4$
So, 4 must be subtracted.
- (d) $123456 \div 10 = Q = 12345, R = 6$
So, 6 must be subtracted.
7. For 5 divisibility at ones place it should be 5 or 0.
- (a) 9256
 $6 + 4 = 10$; number became 9260 when 4 is added
 $\therefore 9260$ is divisible by 5.
- (b) 82451
 $1 + 4 = 5$ 4 is added to ones place to get 5.
 $\therefore 8245$ is divisible by 5.
- (c) 88888
 $8 + 2 = 10$
number became 88890 when 2 is added.
 $\therefore 88890$ is divisible by 5
- (d) 123462
 $2 + 3 = 5$ number becomes 123465 when 3 is added.
 $\therefore 123465$ is divisible by 5.
8. (a) 763 (b) 2176
 $7 + 6 + 3 + 2 = 18$ $2 + 1 + 7 + 6 + 2 = 18$
Ans. 2 is in ones place. 2 is in ones place.
- (c) 457 (d) 5038
 $4 + 5 + 7 + 2 = 18$ $5 + 0 + 3 + 8 + 2 = 18$
so 2 at ones place. so 2 at ones place.

(e) 56322

$$5 + 6 + 3 + 2 + 2 + 0 = 18$$

So, 0 at ones place

Exercise 22

1. (a) 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47
(b) 53, 59, 61, 67
2. (a) 4, 6, 8, 9, 10, 12, 14, 15, 16, 18, 20, 21, 22, 24, 25, 26, 27, 28, 30
(b) 32, 33, 34, 35, 36, 38, 39, 40, 42, 44, 45, 46, 48, 49
3. 2 only
4. 4
5. (a) true (b) false (c) true (d) false
6. (a) 48 (b) 50

2	48
2	24
2	12
2	6
3	3
	1

Prime factors

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

(c) 84

2	84
2	42
3	21
7	7
	1

Prime factors

$$2 \times 2 \times 3 \times 7$$

7. $2 \times 3 \times 5 = 30$

9. 3 and 5

2	50
5	25
5	5
	1

Prime factors

$$2 \times 5 \times 5$$

(d) 120

2	120
2	60
2	30
3	15
5	5
	1

Prime factors

$$2 \times 2 \times 2 \times 3 \times 5$$

8. $2 \times 5 \times 7 = 70$

10. 4 and 8

Exercise 23

1. H.C.F.

- (a) 46 and 8

$$46 = 2 \times 23$$

$$8 = 2 \times 2 \times 2$$

The common factor is 2.

$$\text{H.C.F.} = 2$$

- (b) 6, 9 and 15

$$6 = 3 \times 2$$

$$9 = 3 \times 3$$

$$15 = 3 \times 5$$

The common factor is 3.

$$\text{H.C.F.} = 3$$

- (c) 8, 12 and 16

$$8 = 2 \times 2 \times 2$$

$$12 = 2 \times 3 \times 2$$

$$16 = 2 \times 2 \times 2 \times 2$$

The common factor is $2 \times 2 = 4$

$$\text{H.C.F.} = 4$$

- (d) 18, 24 and 40

$$18 = 2 \times 3 \times 3$$

$$24 = 2 \times 2 \times 2 \times 3$$

$$40 = 2 \times 2 \times 2 \times 5$$

The common factor is 2

$$\text{H.C.F.} = 2$$

- (e) 120 and 96

$$120 = 2 \times 2 \times 3 \times 2 \times 5$$

$$96 = 2 \times 2 \times 2 \times 2 \times 2 \times 3$$

The common factor is $2 \times 2 \times 2 \times 3 = 24$

$$\text{H.C.F.} = 24$$

- (f) 60, 210 and 240

$$60 = 2 \times 3 \times 2 \times 5$$

$$210 = 2 \times 5 \times 3 \times 7$$

$$240 = 2 \times 5 \times 2 \times 2 \times 2 \times 3$$

The common factor is $2 \times 5 \times 3 = 30$

$$\text{H.C.F.} = 30$$

2. (a) 42 and 63.

2	42
3	21
7	7
	1

3	63
3	21
7	7
	1

$$42 = 2 \times 3 \times 7$$

$$63 = 3 \times 3 \times 7$$

The common factors are 3 and 7.

(b) 168 and 60

2	168
2	84
2	42
3	21
7	7
	1

2	60
2	30
3	15
5	5
	1

$$168 = 2 \times 2 \times 2 \times 3 \times 7$$

$$60 = 2 \times 2 \times 3 \times 5$$

The common factors are 2, 2 and 3

(c) 60, 210 and 320

2	60
2	30
3	15
5	5
	1

2	210
3	105
7	35
5	5
	1

2	320
2	160
2	80
2	40
2	20
2	10
5	5
	1

$$60 = 2 \times 2 \times 3 \times 5$$

$$210 = 2 \times 3 \times 7 \times 5$$

$$320 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 5$$

The common factors are 2 and 5.

(d) 60, 150 and 210

2	60
2	30
3	15
5	5
	1

3	150
5	50
2	10
5	5
	1

2	210
5	105
3	21
7	7
	1

$$60 = 2 \times 2 \times 3 \times 5$$

$$150 = 2 \times 5 \times 5 \times 3$$

$$210 = 2 \times 3 \times 7 \times 5$$

The common factors are 2, 5, 3

3. (a) 45 and 75

5	45
3	9
3	3
	1

5	75
5	15
3	3
	1

$$45 = 5 \times 3 \times 3$$

$$75 = 5 \times 5 \times 3$$

The common factors are $= 5 \times 3 = 15$

H.C.F. = 15

(b) 108 and 162

2	108
2	54
3	27
3	9
3	3
	1

2	162
3	81
3	27
3	9
3	3
	1

$$108 = 2 \times 2 \times 3 \times 3 \times 3$$

$$162 = 2 \times 3 \times 3 \times 3 \times 3$$

The common factors are $= 2 \times 3 \times 3 \times 3 = 54$

H.C.F. = 54

(c) 240, 720

2	240
2	120
2	60
2	30
3	15
5	5
	1

3	720
3	240
2	80
2	40
2	20
2	10
5	5
	1

$$240 = 2 \times 2 \times 2 \times 2 \times 3 \times 5$$

$$720 = 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 5$$

The common factors are $= 2 \times 2 \times 2 \times 2 \times 3 \times 5 = 240$

H.C.F. = 240

(d) 128, 136 and 512

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

2	136
2	68
2	34
17	17
	1

2	512
2	256
2	128
2	64
2	32
2	16
2	8
2	4
2	2
	1

$$128 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$$

$$136 = 2 \times 2 \times 2 \times 17$$

$$512 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$$

The common factors are $2 \times 2 \times 2 = 8$

H.C.F. = 8

(e) 54, 90 and 216

2	54
3	27
3	9
3	3
	1

3	90
3	30
2	10
5	5
	1

2	216
2	108
2	54
3	27
3	9
3	3
	1

$$54 = 2 \times 3 \times 3 \times 3$$

$$90 = 2 \times 5 \times 3 \times 3$$

$$216 = 3 \times 3 \times 3 \times 2 \times 2 \times 2$$

The common factors are $= 2 \times 3 \times 3 = 18$

$$\text{H.C.F.} = 18$$

Exercise 24

1. The number which divide 36 and 56 will be H.C.F.

2	36
2	18
3	9
3	3
	1

2	56
2	28
2	14
7	7
	1

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

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

The common factor $= 2 \times 2 = 4$

$$\text{H.C.F.} = 4$$

2. The number which divided 48 and 72.

2	48
2	24
2	12
2	6
3	3
	1

2	72
2	36
2	18
3	9
3	3
	1

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

$$72 = 2 \times 2 \times 2 \times 3 \times 3$$

$$\text{The common factor} = 2 \times 2 \times 2 \times 3 = 24$$

$$\text{H.C.F.} = 24$$

3. The number which divided 24, 36 and 108

2	24
2	12
2	6
3	3
	1

2	36
2	18
3	9
3	3
	1

2	108
2	54
3	27
3	9
3	3
	1

$$24 = 2 \times 2 \times 2 \times 3$$

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

$$108 = 2 \times 2 \times 3 \times 3 \times 3$$

$$\text{The common factors are} = 2 \times 2 \times 3 = 12$$

$$\text{H.C.F.} = 12$$

4. $24 - 2 = 22$; $35 - 2 = 33$; $46 - 2 = 44$

2	22
11	11
	1

3	33
11	11
	1

4	44
11	11
	1

$$22 = 2 \times 11$$

$$33 = 3 \times 11$$

$$44 = 4 \times 11$$

$$\text{The common factor is} = 11$$

$$\text{H.C.F.} = 11$$

5. $34 - 4 = 30$;

$$56 - 6 = 50$$

$$68 - 8 = 60$$

3	30
2	10
5	5
	1

5	50
2	10
5	5
	1

3	60
2	20
2	10
5	5
	1

$$30 = 3 \times 2 \times 5$$

$$50 = 5 \times 2 \times 5$$

$$60 = 3 \times 5 \times 2 \times 2$$

$$\text{The common factors are} = 5 \times 2 = 10$$

$$\text{H.C.F.} = 10$$

$$6. \quad 65 - 5 = 60;$$

2	60
2	30
3	15
5	5
	1

$$96 - 6 = 90$$

3	90
3	30
2	10
5	5
	1

$$142 - 7 = 135$$

5	135
3	27
3	9
3	3
	1

$$60 = 2 \times 2 \times 3 \times 5$$

$$90 = 3 \times 3 \times 2 \times 5$$

$$135 = 3 \times 3 \times 3 \times 5$$

$$\text{The common factors are } = 5 \times 3 = 15$$

$$\text{H.C.F.} = 15$$

Exercise 25

1. (a) 8 and 16

The two common multiples are

$$8 \times 2 = 16$$

$$16 \times 1 = 16$$

$$8 \times 4 = 32$$

$$16 \times 2 = 32$$

$$16, 32$$

- (b) 4 and 6

The two common multiples are

$$6 \times 2 = 12$$

$$4 \times 3 = 12$$

$$6 \times 4 = 24$$

$$12, 24$$

- (c) 12 and 15

The two common multiples are

$$12 \times 5 = 60$$

$$15 \times 4 = 60$$

$$12 \times 10 = 120$$

$$15 \times 8 = 120$$

$$60, 120$$

- (d) 10 and 20

The two common multiples are

$$10 \times 2 = 20$$

$$20 \times 1 = 20$$

$$10 \times 4 = 40$$

$$20 \times 2 = 40$$

$$20, 40$$

- (e) 2, 3 and 4

The two common multiples are

$$2 \times 6 = 12,$$

$$2 \times 12 = 24$$

$$3 \times 4 = 12,$$

$$3 \times 8 = 24$$

$$4 \times 3 = 12$$

$$12, 24$$

$$4 \times 6 = 24$$

(f) 3, 6 and 9

The two common multiple are

$$3 \times 6 = 18,$$

$$3 \times 12 = 36$$

$$6 \times 3 = 18,$$

$$6 \times 6 = 36$$

$$9 \times 2 = 18,$$

$$9 \times 4 = 36$$

$$18, 36$$

2. (a) 3 and 6

(b) 4 and 8

The L.C.M. is 6.

the L.C.M. is 8.

(c) 6 and 10

(d) 8 and 10

the L.C.M. is 30

The L.C.M. is 40

$$\text{as } 6 \times 5 = 30; 10 \times 3 = 30$$

(e) 4, 6 and 10

The L.C.M. is 60.

Exercise 26

1. 6 and 9

3	6, 9
2	2, 3
3	1, 3
	1, 1

$$\text{LCM} = 3 \times 3 \times 2 = 18$$

2. 6 and 21

3	6, 21
2	2, 7
7	1, 7
	1, 1

$$\text{LCM} = 3 \times 2 \times 7 = 42$$

3. 9 and 24

3	9, 24
3	3, 8
2	1, 8
2	1, 4
2	1, 2
	1, 1

$$\text{LCM} = 3 \times 3 \times 2 \times 2 \times 2 = 72$$

$$\begin{array}{r|l}
 2 & 12, 36 \\
 \hline
 3 & 6, 18 \\
 \hline
 3 & 2, 6 \\
 \hline
 2 & 2, 2 \\
 \hline
 & 1, 1
 \end{array}$$

$$\text{L.C.M.} = 2 \times 2 \times 3 \times 3 = 36$$

5. 18 and 54

$$\begin{array}{r|l}
 2 & 18, 54 \\
 \hline
 3 & 9, 27 \\
 \hline
 3 & 3, 9 \\
 \hline
 & 1, 3
 \end{array}$$

$$\text{LCM} = 2 \times 3 \times 3 \times 3 = 54$$

6. 20 and 45

$$\begin{array}{r|l}
 2 & 20, 45 \\
 \hline
 5 & 10, 45 \\
 \hline
 2 & 2, 9 \\
 \hline
 3 & 1, 9 \\
 \hline
 & 1, 3
 \end{array}$$

$$\text{LCM} = 2 \times 5 \times 2 \times 3 \times 3 = 180$$

7. 36 and 48

$$\begin{array}{r|l}
 2 & 36, 48 \\
 \hline
 3 & 18, 24 \\
 \hline
 2 & 6, 8 \\
 \hline
 2 & 3, 4 \\
 \hline
 & 3, 2
 \end{array}$$

$$\text{LCM} = 2 \times 3 \times 2 \times 2 \times 2 \times 3 = 144$$

8. 25 and 80

$$\begin{array}{r|l}
 5 & 25, 80 \\
 \hline
 2 & 5, 16 \\
 \hline
 2 & 5, 8 \\
 \hline
 2 & 5, 4 \\
 \hline
 & 5, 2
 \end{array}$$

$$\text{LCM} = 5 \times 2 \times 2 \times 2 \times 2 \times 5 = 400$$

9. 6, 9, and 12

3	6, 9, 12
2	2, 3, 4
	1, 3, 2

$$\text{LCM} = 3 \times 2 \times 2 \times 3 = 36$$

10. 15, 20 and 25

5	15, 20, 25
2	3, 4, 5
	3, 2, 5

$$\text{LCM} = 5 \times 2 \times 3 \times 2 \times 5 = 300 = 30$$

11. 16, 24 and 40

2	16, 24, 40
2	8, 12, 20
2	4, 6, 10
	2, 3, 5

$$\text{LCM} = 2 \times 2 \times 2 \times 3 \times 2 \times 5 = 240$$

12. 14, 21 and 35

7	14, 21, 35
2	2, 3, 5
	1, 3, 5

$$\text{LCM} = 7 \times 2 \times 3 \times 5 = 210$$

Exercise 27

1. $12 = 2 \times 3 \times 2$

$30 = 2 \times 5 \times 3$

$\text{H.C.F.} = 2 \times 3 = 6$

$\text{L.C.M.} = (\text{Product}) \div 6$
 $= (12 \times 30) \div 6$
 $= 360 \div 6 = 60$

2. L.C.M. of 36, 54, 72

3	36, 54, 72
3	12, 18, 24
2	4, 6, 8
2	2, 3, 4
	1, 3, 2

$$\text{LCM} = 3 \times 3 \times 2 \times 2 \times 3 \times 2 = 216$$

3. 12, 30 and 6

2	12, 30, 6
3	6, 15, 3
2	2, 5, 1
5	1, 5, 1
	1, 1, 1

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

4.

2	10, 14, 18
	5, 7, 9

$$\text{LCM} = 2 \times 5 \times 7 \times 9 = 630$$

$$\text{So, the required number} = 630 + 2 = 632$$

5.

3	15, 25, 30
5	5, 25, 10
5	1, 5, 2
2	1, 1, 2
	1, 1, 1

$$\text{LCM} = 3 \times 5 \times 5 \times 2 = 150$$

$$\text{So, the required number} = 150 + 1 = 151$$

6. Product of two numbers = 4

$$\text{H.C.F.} = 4$$

$$\begin{aligned} \text{L.C.M.} &= \text{Product} \div \text{H.C.F.} \\ &= 48 \div 4 = 12 \end{aligned}$$

7. Product of numbers = 135

$$\text{L.C.M.} = 45$$

$$\begin{aligned} \text{H.C.F.} &= \text{product} \div \text{L.C.M.} \\ &= 135 \div 45 = 3 \end{aligned}$$

8. H.C.F. = 8

$$\text{L.C.M.} = 96$$

$$\begin{aligned} \text{Product of numbers} &= \text{H.C.F.} \times \text{L.C.M.} \\ &= 8 \times 96 = 768 \end{aligned}$$

$$\text{Another number} = 768 \div 24 = 32$$

Test Paper

- I. 1. 3 — 3, 9, 15, 21, 27, 33, 39, 45, 51, 57
2. 7 — 14, 28, 42, 56, 70, 84, 98, 112, 126, 140
3. (a) 9 — 18, 36, 54, 72, 90
(b) 13 — 26, 52, 78, 104, 130
4. (a) 15 — 15, 45, 75, 105, 135
(b) 21 — 21, 63, 105, 147, 189
- II. 1. (iii) 9, 18, 27 ... 2. (iv) 540810
3. (iii) 28 4. (iii) 1, 2, 5, 10
5. (iii) 80 6. (i) 10, 20, 30
7. (ii) 88 ($\therefore$ 8 is an even number)
8. 2465 $\square$
 $2 + 4 + 6 + 5 + 1 = 18$
 $18 \div 3 = 6$
9. 120
as $24 \times 5 = 120$
 $20 \times 6 = 120$
 $30 \times 4 = 120$

Activity Time

1. Multiple of 11 — 220, 143, 176, 33, 121, 88, 165, 330
Multiple of 15 — 120, 180, 45, 165, 330
Common multiples = 165, 330
2. (a) 3, 21, 9, 27, 15 (b) 24, 30, 18, 6, 12
(c) 11, 19, 23, 7, 5

Fractional Numbers

Exercise 28

1. (a) $\frac{4}{7}$ (b) $\frac{3}{8}$ (c) $\frac{2}{4}$
 2. (a) $N=3, D=7$ (b) $N=5, D=12$
 (c) $N=7, D=8$ (d) $N=8, D=11$

Exercise 29

1. (a) $\frac{4}{5} \times \frac{4}{4} = \frac{16}{20} = \frac{16}{20}$ (b) $\frac{5}{9} \times \frac{3}{3} = \frac{15}{27} \neq \frac{15}{17}$
 Yes No
 (c) $\frac{8}{9}$ and $\frac{24}{27}$ (d) $\frac{4}{11}$ and $\frac{12}{33}$
 $\frac{8 \times 3}{9 \times 3} = \frac{24}{27}$ Yes $\frac{4 \times 3}{11 \times 3} = \frac{12}{33}$ Yes
 2. (a) $\frac{7}{28} \left(\because \frac{7}{28} = \frac{1}{4} \neq \frac{1}{6} \right)$ (b) $\frac{12}{15} \left(\because \frac{12}{15} = \frac{4}{5} \neq \frac{3}{4} \right)$
 (c) $\frac{5}{30} \left(\because \frac{5}{30} = \frac{1}{6} \neq \frac{1}{7} \right)$ (d) $\frac{13}{25} \left(\because \frac{13}{25} \neq \frac{3}{5} \right)$
 3. (a) $\frac{1}{4}, \frac{2}{8}, \frac{3}{12}, \frac{4}{16}, \frac{5}{20}, \frac{6}{24}$ (b) $\frac{2}{3}, \frac{4}{6}, \frac{6}{9}, \frac{8}{12}, \frac{10}{15}, \frac{12}{18}$
 (c) $\frac{3}{4}, \frac{6}{8}, \frac{9}{12}, \frac{12}{16}, \frac{15}{20}, \frac{18}{24}$ (d) $\frac{8}{14}, \frac{12}{21}, \frac{16}{28}, \frac{20}{35}, \frac{24}{42}$
 (e) $\frac{5}{8}, \frac{10}{16}, \frac{15}{24}, \frac{20}{32}, \frac{25}{40}, \frac{30}{48}$

4. (a) $\frac{1}{2}$, Numerator = 16

$$16 \div 2 = 8$$

$$\frac{1}{2} \times \frac{8}{8} = \frac{8}{16}$$

(b) $\frac{1}{4}$, $16 \div 4 = 4$

$$\frac{1}{4} \times \frac{4}{4} = \frac{4}{16}$$

(c) $\frac{8 \div 4}{64 \div 4} = \frac{2}{16}$

(d) $\frac{4 \div 2}{32 \div 2} = \frac{2}{16}$

5. (a) $\frac{1}{4}$, Denominator 36 $36 \div 4 = 9$

$$\frac{1}{4} \times \frac{9}{9} = \frac{9}{36}$$

(b) $\frac{2}{9}$, $36 \div 9 = 4$

$$\frac{2}{9} \times \frac{4}{4} = \frac{8}{36}$$

(c) $\frac{2}{3}$, $36 \div 3 = 12$

$$\frac{2}{3} \times \frac{12}{12} = \frac{24}{36}$$

(d) $\frac{5}{6}$, $36 \div 6 = 6$

$$\frac{5}{6} \times \frac{6}{6} = \frac{30}{36}$$

6. (a) $\frac{1}{5} = \frac{\square}{25}$

$$\frac{25}{5} = 5 \quad \text{So, } \frac{1 \times 5}{5 \times 5} = \frac{\boxed{5}}{25} \text{ Ans.}$$

$$(b) \frac{1}{4} = \frac{4}{\boxed{}}, \quad 4 \div 1 = 4$$

$$\frac{1}{4} \times \frac{4}{4} = \frac{\boxed{4}}{16}$$

$$(c) \frac{3}{4} = \frac{\boxed{}}{20}$$

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

$$(d) \frac{5}{7} = \frac{20}{\boxed{}}$$

$$\boxed{} = \frac{20 \times 7}{5}$$

$$\boxed{} = 28$$

$$(e) \frac{5}{8} = \frac{\boxed{}}{24}$$

$$\frac{5 \times 24}{8} = \boxed{}$$

$$15 = \boxed{}$$

$$(f) \frac{2}{12} = \frac{\boxed{}}{72}$$

$$\frac{2 \times 72}{12} = \boxed{}$$

$$\boxed{} = 12$$

$$(g) \frac{8}{9} = \frac{64}{\boxed{}}$$

$$\boxed{} = \frac{64 \times 9}{8}$$

$$\boxed{} = 8 \times 9$$

$$\boxed{} = 72$$

$$(h) \frac{1}{9} = \frac{\boxed{}}{81}$$

$$\frac{81}{9} = \boxed{}$$

$$\boxed{} = 9$$

7. (a) Numerator = 6

$$\frac{48}{64}$$

$$48 \div 6 = 8$$

$$\frac{48 \div 8}{64 \div 8} = \frac{6}{8}$$

(b) Denominator = 8

$$64 \div 8 = 8$$

$$\frac{48 \div 8}{64 \div 8} = \frac{6}{8}$$

(c) Numerator = 24

$$48 \div 24 = 2$$

$$\frac{48 \div 2}{64 \div 2} = \frac{24}{32}$$

$$8. \quad (a) \quad \frac{4 \times 2}{5 \times 2} = \frac{8}{10} \quad (\because 8 \div 4 = 2)$$

$$(b) \quad \frac{4 \times 6}{5 \times 6} = \frac{24}{30} \quad (\because 24 \div 4 = 6)$$

$$(c) \quad \frac{4 \times 4}{5 \times 4} = \frac{16}{20} \quad (\because 20 \div 5 = 4)$$

$$(d) \quad \frac{4 \times 7}{5 \times 7} = \frac{28}{35} \quad (\because 35 \div 5 = 7)$$

$$(e) \quad \frac{4 \times 8}{5 \times 8} = \frac{32}{40} \quad (\because 32 \div 4 = 8)$$

$$(f) \quad \frac{4 \times 10}{5 \times 10} = \frac{40}{50} \quad (\because 50 \div 5 = 10)$$

$$9. \quad (a) \quad \frac{1}{2} = \frac{2}{4} = \frac{\boxed{4}}{8} = \frac{\boxed{6}}{12}$$

$$\frac{1 \times 4}{2 \times 4} = \frac{4}{8}$$

$$[\therefore 8 \div 2 = 4]$$

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

$$[\therefore 12 \div 2 = 6]$$

$$(b) \quad \frac{2}{5} = \frac{\boxed{}}{15} = \frac{10}{\boxed{}} = \frac{18}{\boxed{}}$$

$$\frac{2 \times 3}{5 \times 3} = \frac{6}{15}$$

$$[\therefore 15 \div 5 = 3]$$

$$\frac{2 \times 5}{5 \times 5} = \frac{10}{25}$$

$$[\therefore 10 \div 2 = 5]$$

$$\frac{2 \times 9}{5 \times 9} = \frac{18}{45}$$

$$[\therefore 18 \div 2 = 9]$$

$$(c) \quad \frac{3}{4} = \frac{9}{\boxed{}} = \frac{15}{\boxed{}} = \frac{\boxed{}}{32}$$

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

$$[\therefore 9 \div 3 = 3]$$

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

$$[\therefore 15 \div 3 = 5]$$

$$\frac{3 \times 8}{4 \times 8} = \frac{24}{32}$$

$$[\therefore 32 \div 4 = 8]$$

$$(d) \quad \frac{4}{11} = \frac{8}{\boxed{}} = \frac{20}{\boxed{}} = \frac{\boxed{}}{77}$$

$$\frac{4 \times 2}{11 \times 2} = \frac{8}{22}$$

$$[\therefore 8 \div 4 = 2]$$

$$\frac{4 \times 5}{11 \times 5} = \frac{20}{55}$$

$$[\therefore 20 \div 4 = 5]$$

$$\frac{4 \times 7}{11 \times 7} = \frac{28}{77}$$

$$[\therefore 77 \div 11 = 7]$$

$$10. \quad (a) \quad \frac{28 \div 4}{60 \div 4} = \frac{7}{15}$$

$$(b) \quad \frac{25 \div 25}{100 \div 25} = \frac{1}{4}$$

$$(c) \quad \frac{27 \div 3}{30 \div 3} = \frac{9}{10}$$

$$(d) \quad \frac{60 \div 60}{240 \div 60} = \frac{1}{4}$$

Exercise 30

1. (b), (c), (d)

2. (a), (d)

$$3. \quad (a) \quad \frac{1}{4} \times \frac{3}{3} = \frac{3}{12}$$

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

$$\frac{2}{4} \times \frac{4}{4} = \frac{8}{12}$$

$$\frac{4}{5} \times \frac{3}{3} = \frac{12}{15}$$

$$(c) \quad \frac{3}{5} \times \frac{9}{9} = \frac{27}{45}$$

$$\frac{4}{9} \times \frac{5}{5} = \frac{20}{45}$$

$$4. \quad (a) \quad \frac{5}{8} \quad (d) \quad \frac{1}{9}$$

$$5. \quad (a) \quad \frac{19}{10} \quad (b) \quad \frac{15}{7}$$

$$(c) \quad \frac{11}{8}$$

$$6. \quad (c) \quad 5\frac{1}{3}$$

$$(d) \quad 6\frac{3}{4}$$

$$7. \quad (a) \quad \frac{13}{3} = 4\frac{1}{3} \quad (b) \quad \frac{17}{2} = 8\frac{1}{2} \quad (c) \quad \frac{21}{4} = 5\frac{1}{4} \quad (d) \quad \frac{52}{11} = 4\frac{8}{11}$$

$$(e) \quad \frac{27}{5} = 5\frac{2}{5}$$

$$8. \quad (a) \quad 6\frac{3}{4} = \frac{6 \times 4 + 3}{4} = \frac{27}{4}$$

$$(b) \quad 4\frac{5}{7} = \frac{4 \times 7 + 5}{7} = \frac{33}{7}$$

$$(c) \quad 4\frac{1}{10} = \frac{4 \times 10 + 1}{10} = \frac{41}{10}$$

$$(d) \quad 5\frac{2}{3} = \frac{5 \times 3 + 2}{3} = \frac{17}{3}$$

$$(e) \quad 9\frac{2}{3} = \frac{9 \times 3 + 2}{3} = \frac{29}{3}$$

$$9. \quad (a) 28\frac{3}{4} \quad (b) 48\frac{1}{2} \quad (c) 58\frac{1}{3} \quad (d) 108\frac{3}{7}$$

Exercise 31

$$1. \quad (a) \frac{2}{5}, \frac{3}{4}$$

L.C.M. of 5 and 4 = 20

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

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

$$(b) \frac{7}{12}, \frac{3}{7}$$

L.C.M. of $12 \times 7 = 84$

$$\frac{7 \times 7}{12 \times 7} = \frac{49}{84}$$

$$\frac{3 \times 12}{7 \times 12} = \frac{36}{84}$$

$$(c) \frac{1}{4}, \frac{5}{16}$$

L.C.M. of 4 and 16 = 16

$$\frac{1 \times 4}{4 \times 4} = \frac{4}{16}$$

$$\frac{5}{16}$$

$$\frac{4}{16}, \frac{5}{16}$$

$$(d) \frac{4}{9}, \frac{5}{12}$$

L.C.M. of 9 and 12 = 36

$$\frac{4 \times 4}{9 \times 4} = \frac{16}{36}$$

$$\frac{5 \times 3}{12 \times 3} = \frac{15}{36}$$

$$\frac{16}{36}, \frac{15}{36}$$

(e) $\frac{1}{2}, \frac{1}{4}, \frac{3}{10}$

L.C.M. of 2, 4, 10 is 20

$$\frac{1 \times 10}{2 \times 10} = \frac{10}{20}$$

$$\frac{1 \times 5}{4 \times 5} = \frac{5}{20}$$

$$\frac{3 \times 2}{10 \times 2} = \frac{6}{20}$$

$$\frac{10}{20}, \frac{5}{20}, \frac{6}{20}$$

(f) $\frac{1}{4}, \frac{3}{8}, \frac{1}{16}$

L.C.M. of 4, 8, 16 = 16

$$\frac{1 \times 4}{4 \times 4} = \frac{4}{16}$$

$$\frac{3 \times 2}{8 \times 2} = \frac{6}{16}$$

$$\frac{1}{16}$$

$$\frac{4}{16}, \frac{6}{16}, \frac{1}{16}$$

2. (a) $\frac{5}{3}, \frac{9}{2}$

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

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

$$\frac{9 \times 3}{2 \times 3} = \frac{27}{6}$$

as $\frac{27}{6} > \frac{10}{6}$

so, $\frac{9}{2}$ is greater than $\frac{5}{3}$

(b) $\frac{4}{9}, \frac{3}{5}$

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

$$\frac{4 \times 5}{9 \times 5} = \frac{20}{45}$$

$$\frac{3 \times 9}{5 \times 9} = \frac{27}{45}$$

$$\frac{20}{45} < \frac{27}{45}$$

$\frac{27}{45}$ is greater than $\frac{20}{45}$; so $\frac{3}{5} > \frac{4}{9}$

(c) $\frac{1}{4}, \frac{11}{18}$

L.C.M. of 4, 18 is 36

$$\frac{1 \times 9}{4 \times 9} = \frac{9}{36}$$

$$\frac{11 \times 2}{18 \times 2} = \frac{22}{36}$$

$$\frac{9}{36} < \frac{22}{36}$$

as $\frac{22}{36}$ is greater than $\frac{9}{36}$ so, $\frac{11}{18} > \frac{1}{4}$

(d) $\frac{3}{7}, \frac{9}{15}$

L.C.M. of 7 and 15 is = 105

$$\frac{3 \times 15}{7 \times 15} = \frac{45}{105}$$

$$\frac{9 \times 7}{15 \times 7} = \frac{63}{105}$$

as $\frac{63}{105} > \frac{45}{105}$

$\frac{9}{15}$ is greater than $\frac{3}{7}$

(e) $3\frac{1}{2}, \frac{13}{3}$

$$\frac{7}{2}, \frac{13}{3}$$

L.C.M. = 3, 2 is 6

$$\frac{7 \times 3}{2 \times 3} = \frac{21}{6}$$

$$\frac{13 \times 2}{3 \times 2} = \frac{26}{6}$$

as $\frac{26}{6} > \frac{21}{6}$

so, $\frac{13}{3}$ is greater than $3\frac{1}{2}$

(f) $1\frac{9}{12}, 1\frac{11}{15}$

L.C.M. of 12 and 15 is 60

$$\frac{21}{12}, \frac{26}{15}$$

$$\frac{21 \times 5}{12 \times 5} = \frac{105}{60}$$

$$\frac{36 \times 4}{15 \times 4} = \frac{104}{60}$$

$$\frac{105}{60} > \frac{104}{60}$$

so $1\frac{9}{12}$ is greater than $1\frac{11}{15}$

(g) $\frac{26}{27}, \frac{7}{12}$

L.C.M. of 27, 12 is 108.

$$\frac{26 \times 4}{27 \times 4} = \frac{104}{108}$$

$$\frac{7 \times 9}{12 \times 9} = \frac{63}{108}$$

as $\frac{104}{108} > \frac{63}{108}$

so, $\frac{26}{27}$ is greater than $\frac{7}{12}$

(h) $2\frac{2}{5}, 2\frac{7}{17}$

$$\frac{12}{5}, \frac{41}{17}$$

L.C.M. of 5 and 17 is 85.

$$\frac{12 \times 17}{5 \times 17} = \frac{204}{85}$$

$$\frac{41 \times 5}{17 \times 5} = \frac{205}{85}$$

$$\frac{205}{85} > \frac{204}{85}$$

So, $2\frac{7}{17}$ is greater than $2\frac{2}{5}$

(i) $\frac{5}{12}, \frac{10}{21}$

L.C.M. of 12 and 21 = 84

$$\frac{5 \times 7}{12 \times 7} = \frac{35}{84}$$

$$\frac{10 \times 4}{21 \times 4} = \frac{40}{84}$$

$$\frac{40}{84} > \frac{35}{84}$$

So, $\frac{10}{21}$ is greater than $\frac{5}{12}$

3. (a) $\frac{7}{19}$ (b) $\frac{5}{13}$ (c) $\frac{6}{19}$

(d) $\frac{15}{16}, \frac{9}{20}$

L.C.M. of 16 and 20 = 80

$$\frac{15 \times 5}{16 \times 5} = \frac{75}{80}$$

$$\frac{9 \times 4}{20 \times 4} = \frac{36}{80}$$

As $\frac{36}{80} < \frac{75}{80}$

$\frac{9}{20}$ is smaller than $\frac{15}{16}$

$$(e) \frac{11}{16} \quad (f) \frac{10}{11}$$

$$(g) \frac{8}{11}, \frac{4}{9}$$

$$\text{L.C.M.} = 11 \times 9 = 99$$

$$\frac{8 \times 9}{11 \times 9} = \frac{72}{99}$$

$$\frac{4 \times 11}{9 \times 11} = \frac{44}{99}$$

$$\frac{72}{99} > \frac{44}{99}$$

So, $\frac{4}{9}$ is smaller.

$$(h) \frac{7}{25}, \frac{6}{17}$$

$$\text{L.C.M. } 25 \times 17$$

$$\frac{7 \times 17}{25 \times 17} = \frac{119}{425}$$

$$\frac{6 \times 25}{17 \times 25} = \frac{150}{425}$$

as $\frac{119}{425}$ is smaller.

so, $\frac{7}{25}$ is smaller than $\frac{6}{17}$

$$4. (a) \frac{1}{3}, \frac{5}{6}, \frac{2}{9}$$

$$\text{L.C.M. of } 3, 6, 9 \text{ is } 18$$

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

$$\frac{5 \times 3}{6 \times 3} = \frac{15}{18}$$

$$\frac{2 \times 2}{9 \times 2} = \frac{4}{18}$$

$$\frac{6}{18}, \frac{15}{18}, \frac{4}{18} \Rightarrow \frac{4}{18}, \frac{6}{18}, \frac{15}{18}$$

$$\text{So } \frac{2}{9}, \frac{1}{3}, \frac{5}{6}$$

$$(b) \frac{5}{6}, \frac{8}{9}, \frac{1}{3}$$

L.C.M. of 6, 9, 3 is 18

$$\frac{5 \times 3}{6 \times 3} = \frac{15}{18}$$

$$\frac{8 \times 2}{9 \times 2} = \frac{16}{18}$$

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

$$\frac{6}{18}, \frac{15}{18}, \frac{16}{18}$$

$$\text{So, } \frac{1}{3}, \frac{5}{6}, \frac{8}{9}$$

$$(c) \frac{1}{18}, \frac{5}{18}, \frac{11}{18}$$

ascending order $\frac{1}{18}, \frac{5}{18}, \frac{11}{18}$

$$(d) \frac{5}{7}, \frac{9}{21}, \frac{5}{14}$$

L.C.M. = 42

$$\frac{5 \times 6}{7 \times 6} = \frac{30}{42}$$

$$\frac{9 \times 2}{21 \times 2} = \frac{18}{42}$$

$$\frac{5 \times 3}{14 \times 3} = \frac{15}{42}$$

$$\frac{15}{42}, \frac{18}{42}, \frac{30}{42}$$

$$\text{So, } \frac{5}{14}, \frac{9}{21}, \frac{5}{7}$$

$$(e) \frac{2}{6}, \frac{7}{12}, \frac{13}{18}$$

L.C.M. of 6, 12, 18 = 36

$$\frac{2 \times 6}{6 \times 6} = \frac{12}{36}$$

$$\frac{7 \times 3}{12 \times 3} = \frac{21}{36}$$

$$\frac{13 \times 2}{18 \times 2} = \frac{26}{36}$$

$$\frac{12}{36}, \frac{21}{36}, \frac{26}{36}$$

$$\text{So, } \frac{2}{6}, \frac{7}{12}, \frac{13}{18}$$

$$(f) \frac{4}{9}, \frac{1}{3}, \frac{6}{27}$$

L.C.M. = 27

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

$$\frac{1 \times 9}{3 \times 9} = \frac{9}{27}$$

$$\frac{6 \times 1}{27 \times 1} = \frac{6}{27}$$

$$\frac{6}{27}, \frac{9}{27}, \frac{12}{27}$$

$$\text{So, } \frac{6}{27}, \frac{1}{3}, \frac{4}{9}$$

5. (a) $\frac{1}{3}, \frac{14}{15}, \frac{11}{20}$

L.C.M. of 3, 15, 20 is 60

$$\frac{1}{3} \times \frac{20}{20} = \frac{20}{60}$$

$$\frac{14 \times 4}{15 \times 4} = \frac{56}{60}$$

$$\frac{11 \times 3}{20 \times 3} = \frac{33}{60}$$

$$\frac{56}{60}, \frac{33}{60}, \frac{20}{60}$$

So, $\frac{14}{15}, \frac{11}{20}, \frac{1}{3}$

(b) $\frac{3}{4}, \frac{9}{16}, \frac{21}{20}$

L.C.M. of 4, 16, 20 = 80

$$\frac{3 \times 20}{4 \times 20} = \frac{60}{80}$$

$$\frac{9 \times 8}{10 \times 8} = \frac{72}{80}$$

$$\frac{21 \times 4}{20 \times 4} = \frac{84}{80}$$

$$\frac{84}{80}, \frac{72}{80}, \frac{60}{80}$$

So, $\frac{21}{40}, \frac{9}{16}, \frac{3}{4}$

(c) $\frac{7}{3}, \frac{3}{10}, \frac{19}{30}$

L.C.M. is 30

$$\frac{7 \times 10}{3 \times 10} = \frac{70}{30}$$

$$\frac{3 \times 3}{10 \times 3} = \frac{9}{30}$$

$$\frac{19 \times 1}{30 \times 1} = \frac{19}{30}$$

$$\frac{70}{30}, \frac{19}{30}, \frac{9}{30}; \quad \text{So, } \frac{7}{3}, \frac{19}{30}, \frac{3}{10}$$

$$(d) \frac{3}{4}, \frac{5}{12}, \frac{5}{8}$$

$$\text{L.C.M.} = 24$$

$$\frac{3 \times 6}{4 \times 6} = \frac{18}{24}$$

$$\frac{5 \times 2}{12 \times 2} = \frac{10}{24}$$

$$\frac{5 \times 3}{8 \times 3} = \frac{15}{24}$$

$$\frac{10}{24}, \frac{15}{24}, \frac{18}{24}$$

$$\text{So, } \frac{5}{12}, \frac{5}{8}, \frac{3}{4}$$

$$(e) \frac{1}{4}, \frac{7}{12}, \frac{11}{14}$$

$$\text{L.C.M. of 4, 12 and 14} = 84$$

$$\frac{1 \times 21}{4 \times 21} = \frac{21}{84}$$

$$\frac{7 \times 7}{12 \times 7} = \frac{49}{84}$$

$$\frac{11 \times 6}{14 \times 6} = \frac{66}{84}$$

$$\frac{66}{84}, \frac{49}{84}, \frac{21}{24} \quad \text{So, } \frac{11}{14}, \frac{7}{12}, \frac{1}{4}$$

$$(f) \frac{1}{4}, \frac{4}{5}, \frac{13}{15}$$

L.C.M. of 4, 5, 15 = 60

$$\frac{1 \times 15}{4 \times 15} = \frac{15}{60}$$

$$\frac{4 \times 12}{5 \times 12} = \frac{48}{60}$$

$$\frac{13 \times 4}{15 \times 4} = \frac{52}{60}$$

$$\frac{52}{60}, \frac{48}{60}, \frac{15}{60}$$

So, $\frac{13}{15}, \frac{4}{5}, \frac{1}{4}$

Exercise 32

$$1. \frac{2}{8} + \frac{5}{8} = \frac{2+5}{8} = \frac{7}{8}$$

$$2. \frac{1}{9} + \frac{4}{9} = \frac{1+4}{9} = \frac{5}{9}$$

$$3. \frac{3}{19} + \frac{8}{19} = \frac{3+8}{19} = \frac{11}{19}$$

$$4. \frac{3}{14} + \frac{5}{14} = \frac{5+3}{14} = \frac{8}{14} \text{ or } \frac{4}{7}$$

$$5. \frac{11}{32} + \frac{15}{32} = \frac{11+15}{32} = \frac{26}{32} \text{ or } \frac{13}{16}$$

$$6. \frac{3}{19} + \frac{7}{19} = \frac{3+7}{19} = \frac{10}{19}$$

$$7. \frac{1}{5} + \frac{3}{5} + \frac{1}{5} = \frac{1+3+1}{5} = \frac{5}{5} = 1$$

$$8. \frac{5}{21} + \frac{4}{21} + \frac{8}{21} = \frac{5+4+8}{21} = \frac{17}{21}$$

$$9. \frac{7}{23}, \frac{5}{23} \text{ and } \frac{9}{23}$$

$$\frac{7+5+9}{23} = \frac{21}{23}$$

$$10. \frac{4}{45} + \frac{16}{45} + \frac{21}{45}$$

$$\frac{4+16+21}{45} = \frac{41}{45}$$

$$11. \frac{7}{30} + \frac{9}{30} + \frac{11}{30}$$

$$\frac{7+9+11}{30} = \frac{27}{30} \text{ or } \frac{9}{10}$$

$$12. \frac{7}{37} + \frac{8}{37} + \frac{11}{37}$$

$$\frac{7+8+11}{37} = \frac{26}{37}$$

$$13. \frac{1}{3} + \frac{2}{7}$$

$$\text{L.C.M.} = 21$$

$$\frac{1 \times 7}{3 \times 7} = \frac{7}{21}$$

$$\frac{2}{7} \times \frac{3}{3} = \frac{6}{21}$$

$$\frac{7}{21} + \frac{6}{21} = \frac{13}{21}$$

$$14. \frac{1}{2} + \frac{1}{6}$$

$$\text{L.C.M.} = 6$$

$$\frac{1 \times 3}{2 \times 3} = \frac{3}{6}$$

$$\frac{3}{6} + \frac{1}{6} = \frac{3+1}{6} = \frac{4}{6} = \frac{2}{3}$$

$$15. \frac{1}{2} + \frac{11}{26}$$

$$\text{L.C.M.} = 26$$

$$\frac{1 \times 13}{2 \times 13} = \frac{13}{26}$$

$$\frac{11}{26} + \frac{13}{26} = \frac{11+13}{26} = \frac{24}{26} \text{ or } \frac{12}{13}$$

$$16. \frac{3}{7} + \frac{5}{14}$$

$$\text{L.C.M.} = 14$$

$$\frac{3 \times 2}{7 \times 2} = \frac{6}{14}$$

$$\frac{6}{14} + \frac{5}{14} = \frac{6+5}{14} = \frac{11}{14}$$

$$17. \frac{1}{3} + \frac{11}{24}$$

$$\text{L.C.M.} = 24$$

$$\frac{1 \times 8}{3 \times 8} = \frac{8}{24}$$

$$\frac{8}{24} + \frac{11}{24} = \frac{8+11}{24} = \frac{19}{24}$$

$$18. \frac{1}{3} + \frac{3}{5}$$

$$\text{L.C.M.} = 3 \times 5 = 15$$

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

$$\frac{3 \times 3}{5 \times 3} = \frac{9}{15}$$

$$\frac{5}{15} + \frac{9}{15} = \frac{5+9}{15} = \frac{14}{15}$$

$$19. \frac{2}{7} + \frac{1}{14} + \frac{4}{21}$$

$$\text{L.C.M.} = 42$$

$$\frac{2 \times 6}{7 \times 6} = \frac{12}{42}$$

$$\frac{1 \times 3}{14 \times 3} = \frac{3}{42}$$

$$\frac{4}{21} \times \frac{2}{2} = \frac{8}{42}$$

$$\begin{aligned} \frac{12}{42} + \frac{3}{42} + \frac{8}{42} &= \frac{12+3+8}{42} \\ &= \frac{23}{42} \end{aligned}$$

$$20. \quad \frac{3}{4} + \frac{1}{12} + \frac{5}{24}$$

$$\text{L.C.M.} = 24$$

$$\frac{3 \times 6}{4 \times 6} = \frac{18}{24}$$

$$\frac{1 \times 2}{12 \times 2} = \frac{2}{24}$$

$$\frac{5}{24} + \frac{2}{24} + \frac{18}{24}$$

$$\frac{5+2+18}{24} = \frac{25}{24} = 1 \frac{1}{24}$$

$$21. \quad \frac{3}{5} + \frac{2}{5} + \frac{4}{15}$$

$$\text{L.C.M.} = 15$$

$$\frac{3 \times 3}{5 \times 3} = \frac{9}{15}$$

$$\frac{2 \times 3}{5 \times 3} = \frac{6}{15}$$

$$\frac{4 \times 1}{15 \times 1} = \frac{4}{15}$$

$$\frac{9}{15} + \frac{6}{15} + \frac{4}{15} = \frac{9+6+4}{15}$$

$$= \frac{19}{15} \text{ or } 1\frac{4}{15}$$

$$22. \quad \frac{1}{2} + \frac{3}{4} + \frac{5}{12}$$

L.C.M. = 12

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

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

$$\frac{5 \times 1}{12 \times 1} = \frac{5}{12}$$

$$\frac{6}{12} + \frac{9}{12} + \frac{5}{12} = \frac{6+9+5}{12} = \frac{20}{12} \text{ or } \frac{5}{3} \text{ or } 1\frac{2}{3}$$

$$23. \quad \frac{11}{15} + \frac{23}{30} + \frac{67}{90}$$

L.C.M. = 90

$$\frac{11 \times 6}{15 \times 6} = \frac{66}{90}$$

$$\frac{23 \times 3}{30 \times 3} = \frac{69}{90}$$

$$\text{So,} \quad \frac{66}{90} + \frac{69}{90} + \frac{67}{90}$$

$$= \frac{66+69+67}{90} = \frac{202}{90}$$

$$= \frac{101}{45} \text{ or } 2\frac{11}{45}$$

$$24. \frac{5}{16} + \frac{7}{32} + \frac{41}{64}$$

L.C.M.

$$\frac{5 \times 4}{16 \times 4} = \frac{20}{64}$$

$$\frac{7 \times 2}{32 \times 2} = \frac{14}{64}$$

$$\frac{20}{64} + \frac{14}{64} + \frac{41}{64} = \frac{75}{64} = 1\frac{11}{64}$$

$$25. \frac{4}{13} + \frac{17}{26} + \frac{5}{52}$$

L.C.M. = 52

$$\frac{4 \times 4}{13 \times 4} = \frac{16}{52}$$

$$\frac{17 \times 2}{26 \times 2} = \frac{34}{52}$$

$$\frac{5}{52} + \frac{16}{52} + \frac{34}{52} = \frac{55}{52} \text{ or } 1\frac{3}{52}$$

$$26. \frac{7}{8} + \frac{9}{16} + \frac{3}{64}$$

L.C.M. = 64

$$\frac{7 \times 8}{8 \times 8} = \frac{56}{64}$$

$$\frac{9 \times 4}{16 \times 4} = \frac{36}{64}$$

$$\frac{3 \times 1}{64 \times 1} = \frac{3}{64}$$

$$\frac{56}{64} + \frac{36}{64} + \frac{3}{64} = \frac{95}{64} \text{ or } 1\frac{31}{64}$$

$$27. \quad \frac{5}{6} + \frac{11}{12} + \frac{19}{24}$$

$$\text{L.C.M.} = 24$$

$$\frac{5 \times 4}{6 \times 4} = \frac{20}{24}$$

$$\frac{11 \times 2}{12 \times 2} = \frac{22}{24}$$

$$\frac{19}{24} + \frac{20}{24} + \frac{22}{24} = \frac{61}{24} \quad \text{or} \quad 2\frac{13}{24}$$

Exercise 33

$$1. \quad 3\frac{1}{2} + 4\frac{1}{2}$$

$$\frac{7}{2} + \frac{9}{2} = \frac{7+9}{2} = \frac{16}{2} = 8$$

$$2. \quad 2\frac{1}{3} + 4\frac{1}{3}$$

$$\frac{7}{3} + \frac{13}{3} = \frac{7+13}{3} = \frac{20}{3} \quad \text{or} \quad 6\frac{2}{3}$$

$$3. \quad 5\frac{1}{5} + 2\frac{1}{5}$$

$$\frac{26}{5} + \frac{11}{5} = \frac{26+11}{5} = \frac{37}{5} \quad \text{or} \quad 7\frac{2}{5}$$

$$4. \quad 1\frac{2}{7} + 3\frac{3}{8}$$

$$\frac{9}{7} + \frac{27}{8} = \frac{72+189}{56} = \frac{261}{56} \quad \text{or} \quad 4\frac{37}{56}$$

$$5. \quad 2\frac{2}{7} + 2\frac{1}{7}$$

$$\frac{16}{7} + \frac{15}{7} = \frac{16+15}{7} = \frac{31}{7} \text{ or } 4\frac{3}{7}$$

$$6. \ 5\frac{2}{7} + 7\frac{3}{7}$$

$$\frac{37}{7} + \frac{52}{7} = \frac{37+52}{7} = \frac{89}{7} \text{ or } 12\frac{5}{7}$$

$$7. \ 2\frac{1}{8} + 3\frac{1}{4}$$

$$\frac{17}{8} + \frac{13}{4} = \frac{17+26}{8} = \frac{43}{8} = 5\frac{3}{8}$$

$$8. \ \frac{1}{5} + 4\frac{2}{5}$$

$$\frac{1}{5} + \frac{22}{5} = \frac{23}{5} \text{ or } 4\frac{3}{5}$$

$$9. \ 7\frac{1}{9} + 3\frac{2}{9}$$

$$\frac{64}{9} + \frac{29}{9} = \frac{64+29}{9} = \frac{93}{9}$$

$$10. \ 1\frac{3}{4} + 2\frac{1}{2} + 1\frac{5}{12}$$

$$\frac{7}{4} + \frac{5}{2} + \frac{17}{12} = \frac{21+30+17}{12} = \frac{68}{12} \text{ or } \frac{17}{3} \text{ or } 5\frac{2}{3}$$

$$11. \ 2\frac{1}{3} + 2\frac{7}{9} + 3\frac{1}{12}$$

$$\frac{7}{3} + \frac{25}{9} + \frac{37}{12} = \frac{84+100+111}{36} = \frac{295}{36} \text{ or } 8\frac{7}{36}$$

$$12. \ 4 + 3 + 2 + \frac{2}{3} + \frac{5}{9} + \frac{11}{12}$$

$$9 + \frac{24+20+33}{36}$$

$$9 + \frac{77}{36}$$

$$9 + 2\frac{5}{36}$$

$$11\frac{5}{36}$$

$$13. \quad 2\frac{1}{2} + 1\frac{2}{3} + 3\frac{3}{5}$$

$$2 + 1 + 3 + \frac{1}{2} + \frac{2}{3} + \frac{3}{5}$$

$$6 + \frac{15 + 20 + 18}{30}$$

$$6 + \frac{53}{30}$$

$$6 + 1\frac{13}{30}$$

$$7\frac{13}{30}$$

$$14. \quad 4\frac{3}{8} + 3\frac{5}{8} + 5\frac{1}{2}$$

$$4 + \frac{3}{8} + 3 + \frac{5}{8} + 5 + \frac{1}{2}$$

$$12 + \frac{3 + 5 + 4}{8}$$

$$12 + \frac{12}{8}$$

$$12 + 1\frac{1}{2}$$

$$13\frac{1}{2}$$

$$15. \quad 5\frac{5}{8} + 6\frac{13}{16} + 1\frac{5}{24}$$

$$5 + 6 + 1 + \frac{5}{8} + \frac{13}{16} + \frac{5}{24}$$

$$12 + \frac{30+39+10}{48}$$

$$12 + \frac{79}{48}$$

$$12 + 1\frac{31}{48}$$

$$13\frac{31}{48}$$

$$16. \frac{2}{3} + \frac{5}{6} + 2\frac{1}{4} + 3$$

$$\frac{2}{3} + \frac{5}{6} + \frac{9}{4} + \frac{3}{1}$$

$$\frac{8+10+27+36}{12}$$

$$= \frac{81}{12} \quad \text{or} \quad \frac{27}{4}$$

$$= 6\frac{3}{4}$$

$$17. \frac{11}{10} + 5\frac{1}{3} + 2$$

$$\frac{11}{10} + \frac{16}{3} + \frac{2}{1}$$

$$\frac{33+160+60}{30} = \frac{253}{30} \quad \text{or} \quad 8\frac{13}{30}$$

$$18. 3\frac{3}{4} + 2 + \frac{27}{12}$$

$$3 + \frac{3}{4} + 2 + 2\frac{3}{12}$$

$$(3+2+2) + \frac{3}{4} + \frac{3}{12}$$

$$7 + \frac{9+3}{12}$$

$$7 + \frac{12}{12} = 8$$

$$19. \quad (a) \quad 7\frac{1}{3} + 2 = \frac{22}{3} + 2$$

$$= \frac{22+6}{3} = \frac{28}{3} = 9\frac{1}{3}$$

$$(b) \quad 3\frac{2}{5} + \square = 4\frac{2}{5}$$

$$3\frac{2}{5} + 1 = 4\frac{2}{5}$$

$$(c) \quad 2\frac{1}{4} + 3\frac{1}{5} = 3\frac{1}{5} + \boxed{2\frac{1}{4}}$$

$$(d) \quad \left(\frac{2}{3} + \frac{3}{4}\right) + \frac{3}{5} = \boxed{\frac{3}{5}} + \left(\frac{2}{3} + \frac{3}{4}\right)$$

Exercise 34

$$1. \quad \frac{5}{7} - \frac{2}{7} = \frac{5-2}{7} = \frac{3}{7}$$

$$2. \quad \frac{9}{11} - \frac{7}{11} = \frac{9-7}{11} = \frac{2}{11}$$

$$3. \quad \frac{8}{13} - \frac{5}{13} = \frac{8-5}{13} = \frac{3}{13}$$

$$4. \quad \frac{5}{6} - \frac{1}{6} = \frac{5-1}{6} = \frac{4}{6} \text{ or } \frac{2}{3}$$

$$5. \quad \frac{13}{19} - \frac{11}{19} = \frac{13-11}{19} = \frac{2}{19}$$

$$6. \quad \frac{14}{25} - \frac{12}{25} = \frac{14-12}{25} = \frac{2}{25}$$

$$7. \quad \frac{15}{17} - \frac{11}{17} = \frac{15-11}{17} = \frac{4}{17}$$

$$8. \quad \frac{15}{22} - \frac{11}{22} = \frac{15-11}{22} = \frac{4}{22} \text{ or } \frac{2}{11}$$

$$9. \quad \frac{28}{29} - \frac{10}{29} = \frac{28-10}{29} = \frac{18}{29}$$

$$10. \quad \frac{18}{30} - \frac{9}{30} = \frac{18-9}{30} = \frac{9}{30} \text{ or } \frac{3}{10}$$

$$11. \quad \frac{41}{47} - \frac{32}{47} = \frac{41-32}{47} = \frac{9}{47}$$

$$12. \quad \frac{79}{89} - \frac{52}{89} = \frac{79-52}{89} = \frac{27}{89}$$

$$13. \quad \frac{1}{2} - \frac{1}{4} = \frac{2-1}{4} = \frac{1}{4}$$

$$14. \quad \frac{3 \times 4}{5 \times 4} - \frac{1 \times 5}{4 \times 5} \Rightarrow \frac{12-5}{20} = \frac{7}{20}$$

15. $\frac{1 \times 2}{6 \times 2} - \frac{1}{12} \Rightarrow \frac{2-1}{12} = \frac{1}{12}$
16. $\frac{11}{12} - \frac{2 \times 4}{3 \times 4} \Rightarrow \frac{11-8}{12} = \frac{3}{12}$
17. $\frac{7 \times 2}{10 \times 2} - \frac{1 \times 5}{4 \times 5} \Rightarrow \frac{14-5}{20} = \frac{9}{20}$
18. $\frac{3 \times 3}{5 \times 3} - \frac{2}{15} \Rightarrow \frac{9-2}{15} = \frac{7}{15}$
19. $\frac{1 \times 4}{12 \times 4} - \frac{1 \times 3}{16 \times 3} \Rightarrow \frac{4-3}{48} = \frac{1}{48}$
20. $\frac{17 \times 3}{20 \times 3} - \frac{5 \times 5}{12 \times 5} \Rightarrow \frac{51-25}{60} = \frac{26}{60}$ or $\frac{13}{30}$
21. $\frac{7 \times 3}{16 \times 3} - \frac{5 \times 4}{12 \times 4} \Rightarrow \frac{21-20}{48} = \frac{1}{48}$
22. $\frac{8}{21} - \frac{5}{42} \Rightarrow \frac{8 \times 2}{21} - \frac{5}{42} = \frac{16-5}{42} = \frac{11}{42}$
23. $\frac{18}{21} - \frac{7}{42} \Rightarrow \frac{18 \times 2}{21 \times 2} - \frac{7}{42} = \frac{36-7}{42} = \frac{29}{42}$
24. $\frac{5}{9} - \frac{3}{18} \Rightarrow \frac{5 \times 2}{9 \times 2} - \frac{3}{18} = \frac{10-3}{18} = \frac{7}{18}$

Exercise 35

1. $9\frac{1}{6} - 4\frac{3}{4}$
 $= \frac{55}{6} - \frac{19}{4}$
 $= \frac{110-57}{12} = \frac{53}{12}$ or $4\frac{5}{12}$
2. $4\frac{5}{12} - 1\frac{1}{12}$
 $\frac{53}{12} - \frac{13}{12}$

$$\frac{53-13}{12} = \frac{40}{12} \quad \text{or} \quad \frac{10}{3} \quad \text{or} \quad 3\frac{1}{3}$$

$$3. \quad 7\frac{7}{1} - 2\frac{3}{32}$$

$$(7-2) + \left(\frac{7}{16} - \frac{3}{32} \right)$$

$$5 + \frac{14-3}{32} \Rightarrow \frac{5}{1} + \frac{11}{32} = 5\frac{11}{32}$$

$$4. \quad 8\frac{3}{4} - 2\frac{1}{8}$$

$$(8-2) + \left(\frac{3}{4} - \frac{1}{8} \right)$$

$$6 + \frac{6-1}{8}$$

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

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

$$5. \quad 5\frac{3}{4} - 3\frac{1}{6}$$

$$(5-3) + \left(\frac{3}{4} - \frac{1}{6} \right)$$

$$2 + \frac{9-2}{12}$$

$$2 + \frac{7}{12}$$

$$2\frac{7}{12}$$

$$6. \quad 6\frac{1}{4} - 2\frac{1}{2}$$

$$\frac{25}{4} - \frac{5}{2}$$

$$\frac{25-10}{4} = \frac{15}{4} = 3\frac{3}{4}$$

$$7. \quad 4\frac{5}{6} - 3\frac{11}{12}$$

$$\frac{29}{6} - \frac{47}{12}$$

$$\frac{58-47}{12} = \frac{11}{12}$$

$$8. \quad 11\frac{1}{2} - 3\frac{11}{12}$$

$$\frac{23}{2} - \frac{47}{12}$$

$$\frac{138-47}{12} = \frac{91}{12} \quad \text{or} \quad 7\frac{7}{12}$$

$$9. \quad 3\frac{5}{16} - 1\frac{1}{8}$$

$$(3-1) + \left(\frac{5}{16} - \frac{1}{8} \right)$$

$$2 + \frac{3}{16}$$

$$2\frac{3}{16}$$

$$10. \quad 6\frac{7}{18} - 2\frac{3}{9}$$

$$(6-2) + \left(\frac{7}{18} - \frac{3}{9} \right)$$

$$4 + \frac{1}{18}$$

$$4\frac{1}{18}$$

$$11. 9\frac{5}{16} - 4\frac{5}{8}$$

$$\frac{149}{16} - \frac{37}{8}$$

$$\frac{149-74}{16} = \frac{75}{16} \text{ or } 4\frac{11}{16}$$

$$12. 14\frac{7}{8} - 11\frac{11}{24}$$

$$(14-11) + \left(\frac{7}{8} - \frac{11}{24}\right)$$

$$3 + \left(\frac{21-11}{24}\right)$$

$$3 + \frac{10}{24}$$

$$3\frac{10}{24} \text{ or } 3\frac{5}{12}$$

$$13. 13\frac{2}{3} - 12\frac{1}{6}$$

$$\frac{41}{3} - \frac{73}{6}$$

$$\frac{82-73}{6} = \frac{9}{6} = \frac{3}{2} \text{ or } 1\frac{1}{2}$$

$$14. 15\frac{3}{8} - 12\frac{3}{4}$$

$$\frac{123}{8} - \frac{51}{4}$$

$$\frac{123-102}{8} = \frac{21}{8} \text{ or } 2\frac{5}{8}$$

$$15. 11\frac{1}{2} - 1\frac{7}{8}$$

$$\frac{23}{2} - \frac{15}{8}$$

$$\frac{92-15}{8} = \frac{77}{8} \text{ or } 9\frac{5}{8}$$

$$16. 13 - 12\frac{1}{4}$$

$$13 - \frac{49}{4}$$

$$\frac{52-49}{4} = \frac{3}{4}$$

$$17. 14 - 11\frac{2}{3}$$

$$14 - \frac{35}{3}$$

$$\frac{42-35}{3} = \frac{7}{3} \text{ or } 2\frac{1}{3}$$

$$18. 15 - 3\frac{3}{4}$$

$$15 - \frac{15}{4}$$

$$\frac{60-15}{4} = \frac{45}{4} \text{ or } 11\frac{1}{4}$$

$$19. (a) 12\frac{1}{4} - 10 = \frac{49}{4} - \frac{10}{1}$$

$$\frac{49-40}{4} = \frac{9}{4} \text{ or } 2\frac{1}{4}$$

$$(b) 5\frac{3}{8} - 3\frac{3}{4}$$

$$\frac{43}{8} - \frac{15}{4} = \frac{43-30}{8} = \frac{13}{8} \text{ or } 1\frac{5}{8}$$

$$(c) 3\frac{5}{8} + \frac{10}{1}$$

$$= \frac{29}{8} + \frac{10}{1} = \frac{29+80}{8} = \frac{109}{8} \text{ or } 13\frac{5}{8}$$

$$\begin{aligned}
 \text{(d) } 15\frac{1}{3} - 12\frac{1}{4} &= (15-2)\left(\frac{1}{3} - \frac{1}{4}\right) \\
 &= 3 + \left(\frac{1}{3} - \frac{1}{4}\right) \\
 &= 3 + \left(\frac{4-3}{12}\right) \\
 &= 3 + \frac{1}{12} \\
 &= 3\frac{1}{12}
 \end{aligned}$$

Exercise 36

$$1. \quad \frac{3}{8} - \frac{1}{4} + \frac{1}{12} \quad \text{L.C.M.} = 24$$

$$\frac{3 \times 3}{8 \times 3} = \frac{9}{24}; \quad \frac{1 \times 6}{4 \times 6} = \frac{6}{24}; \quad \frac{1 \times 2}{12 \times 2} = \frac{2}{24};$$

$$\frac{9}{24} - \frac{6}{24} + \frac{2}{24}$$

$$\frac{9-6+2}{24} = \frac{3+2}{24} = \frac{5}{24}$$

$$2. \quad \frac{5}{6} + \frac{1}{4} - \frac{1}{3}$$

$$\text{L.C.M.} = 12$$

$$\frac{10+3-4}{12} = \frac{13-4}{12} = \frac{9}{12} = \frac{3}{4}$$

$$3. \quad \frac{5}{8} + \frac{1}{2} - \frac{1}{4} \quad (\because \text{L.C.M.} = 8)$$

$$\frac{5+4-2}{8} = \frac{9-2}{8} = \frac{7}{8}$$

$$4. \quad \frac{1}{3} - \frac{5}{12} + \frac{7}{9} \quad (\text{L.C.M.} = 36)$$

$$\frac{12 - 15 + 28}{36} = \frac{40 - 15}{36} = \frac{25}{36}$$

$$5. \quad \frac{7}{10} - \frac{3}{20} + \frac{1}{5}$$

$$\frac{14 - 3 + 4}{20} = \frac{11 + 4}{20} = \frac{15}{20} = \frac{3}{4}$$

$$6. \quad \frac{8}{27} + \frac{5}{9} - \frac{2}{3}$$

$$\frac{8 + 15 - 18}{27} = \frac{23 - 18}{27} = \frac{5}{27}$$

$$7. \quad 5 - \frac{3}{4} + \frac{5}{6}$$

$$\frac{60 - 9 + 10}{12} = \frac{61}{12} = 5\frac{1}{12}$$

$$8. \quad \frac{11}{12} - \frac{1}{4} - \frac{1}{2}$$

$$\frac{11 - 3 - 6}{12}$$

$$\frac{11 - 9}{12} = \frac{2}{12} = \frac{1}{6}$$

$$9. \quad \frac{1}{3} + \frac{5}{8} - \frac{9}{12}$$

$$\frac{8 + 15 - 18}{24}$$

$$\frac{23 - 18}{24} = \frac{5}{24}$$

$$10. \frac{5}{6} - \frac{2}{3} + \frac{4}{9}$$

$$\frac{15-12+8}{18} = \frac{11}{18}$$

$$11. 2\frac{1}{2} - 1\frac{3}{4} + 5\frac{3}{8}$$

$$\frac{5}{2} - \frac{7}{4} + \frac{43}{8}$$

$$\frac{20-14+43}{8} = \frac{49}{8} = 6\frac{1}{8}$$

$$12. 3\frac{1}{3} - 1\frac{1}{6} + 5\frac{7}{12}$$

$$\frac{10}{3} - \frac{7}{6} + \frac{67}{12}$$

$$\frac{40-14+67}{12} = \frac{107-14}{12} = \frac{93}{12} = 7\frac{9}{12} \text{ or } 7\frac{3}{4}$$

$$13. 4\frac{1}{5} - 3\frac{3}{10} + 1\frac{3}{20}$$

$$\frac{21}{5} - \frac{33}{10} + \frac{23}{20}$$

$$\frac{84-66+23}{20} = \frac{107-66}{20}$$

$$\frac{41}{20} = 2\frac{1}{20}$$

$$14. 8\frac{3}{4} - 3\frac{1}{2} + 1\frac{3}{8} \Rightarrow \frac{35}{4} - \frac{7}{2} + \frac{11}{8}$$

$$\frac{70-28+11}{8} \Rightarrow \frac{81-28}{8}$$

$$= \frac{53}{8} = 6\frac{5}{8}$$

Exercise 37

1. Ashu

$$\text{Studies time} = 4\frac{1}{2} \text{ hours}$$

$$\text{Play time} = 1\frac{1}{4} \text{ hours}$$

$$\begin{aligned}\text{Total time} &= 4\frac{1}{2} + 1\frac{1}{4} \\ &= \frac{9}{2} + \frac{5}{4} \\ &= \frac{18+5}{4} \\ &= \frac{23}{4} = 5\frac{3}{4} \text{ hours}\end{aligned}$$

2. Milk drink by

$$\text{Deepu} = \frac{3}{4}l$$

$$\text{Riya} = \frac{2}{3}l$$

$$\text{or } \frac{9}{12}, \frac{8}{12}$$

So, Deepu drank more

$$\text{by } \frac{9-8}{12} = \frac{1}{12} \text{ litre}$$

3. It takes me to go

$$\text{Market by bicycle} = 1\frac{1}{3} \text{ or } \frac{4}{3}$$

$$\text{On foot} = 2\frac{1}{5} \text{ or } \frac{11}{5}$$

$$\begin{aligned}
 \text{Total time} &= \frac{11}{5} + \frac{4}{3} \\
 &= \frac{33+20}{15} \\
 &= \frac{53}{15} = 3\frac{8}{15} \text{ hours}
 \end{aligned}$$

4. Rahul bought milk

$$\text{On Monday} = 3\frac{1}{2}l \text{ or } \frac{7}{2}$$

$$\text{On Tuesday} = 2\frac{3}{4}l \text{ or } \frac{11}{4}$$

$$\text{On Wednesday} = 3$$

$$\begin{aligned}
 \text{Total} &= \frac{7}{2} + \frac{11}{4} + 3 \\
 &= \frac{14+11+12}{4} \\
 &= \frac{37}{4} = 9\frac{1}{4}l
 \end{aligned}$$

$$5. \text{ Total oil} = 15\frac{2}{3}l \Rightarrow \frac{47}{3}l$$

$$\text{Leaked} = 7\frac{1}{4}l \Rightarrow \frac{29}{4}l$$

$$\begin{aligned}
 \text{Remaining oil} &= \frac{47}{3} - \frac{29}{4} \\
 &= \frac{188-87}{12} \\
 &= \frac{101}{12} = 8\frac{5}{12}l
 \end{aligned}$$

$$6. \text{ Total Petrol} = 10l$$

$$\text{Used in car} = 5\frac{1}{2}l \text{ or } \frac{11}{2}l$$

$$\text{In Scooter} = 3\frac{1}{4} = \frac{13}{4}l$$

$$= 10 - \frac{11}{2} - \frac{13}{4}$$

$$= \frac{40 - 22 - 13}{4}$$

$$= \frac{40 - 35}{4} = \frac{5}{4} = 1\frac{1}{4}l$$

$$7. \text{ Total vegetables used} = 4\frac{2}{3} \text{ kg} = \frac{14}{3} \text{ kg}$$

$$\text{Potatoes} = 3\frac{1}{4} \text{ kg} = \frac{13}{4} \text{ kg}$$

$$\text{Tomatoes} = \frac{1}{2} \text{ kg} = \frac{1}{2} \text{ kg}$$

$$\text{Peas} = \frac{14}{3} - \frac{13}{4} - \frac{1}{2}$$

$$= \frac{56 - 39 - 6}{12}$$

$$= \frac{56 - 45}{12} = \frac{11}{12} \text{ kg}$$

$$8. \text{ Suhail travelled} = 50\frac{5}{8} \text{ km} = \frac{405}{8} \text{ km}$$

$$\text{He travelled in two days} = 20\frac{2}{5} + 18\frac{3}{4}$$

$$= \frac{102}{5} + \frac{75}{4}$$

$$= \frac{405 + 375}{20} = \frac{783}{20}$$

$$\text{He travelled on third day} = \frac{405}{8} - \frac{783}{20}$$

$$\begin{aligned}
 &= \frac{2025-1566}{40} \\
 &= \frac{459}{40} = 11\frac{19}{40} \text{ km}
 \end{aligned}$$

$$\begin{aligned}
 \text{9. Total ribbon} &= 15\frac{1}{6} m + 12\frac{3}{4} \\
 &= 15+12+\frac{1}{6}+\frac{3}{4} \\
 &= 27+\frac{2+9}{12} \\
 &= 27+\frac{11}{12} \\
 &= 27\frac{11}{12} m
 \end{aligned}$$

$$\text{She used} = 9\frac{7}{12} m$$

$$\begin{aligned}
 \text{Ribbon left with her} &= 27\frac{11}{12} - 9\frac{7}{12} \\
 &= (27-9) - \left(\frac{11}{12} - \frac{7}{12}\right) \\
 &= 18 + \frac{4}{12} = 18\frac{1}{3}
 \end{aligned}$$

$$\begin{aligned}
 \text{10. } 25\frac{1}{4} + 9\frac{1}{8} \\
 &= (25+9) + \left(\frac{1}{4} + \frac{1}{8}\right) \\
 &= 34 + \left(\frac{3}{8}\right) \\
 &= 34\frac{3}{8}
 \end{aligned}$$

$$13\frac{2}{5} + 9\frac{1}{15} = 13+9 + \left(\frac{2}{5} + \frac{1}{15}\right)$$

$$\begin{aligned}
&= 22 + \left(\frac{6+1}{15} \right) = 22 + \frac{7}{15} \\
&= 22 \frac{7}{15} \\
&= 34 \frac{3}{8} - 22 \frac{7}{15} \\
&\left(33 + 1 \frac{3}{8} \right) - \left(22 + \frac{7}{15} \right) = (33 - 22) + \left(\frac{11}{8} - \frac{7}{15} \right) \\
&11 + \left(\frac{165 - 56}{120} \right) = 11 \frac{109}{120} m
\end{aligned}$$

Exercise 38

1. $\frac{2}{3} \times 6 = 4$
2. $\frac{3}{4} \times 16 = 3 \times 4 = 12$
3. $\frac{9}{16} \times 8 = \frac{9}{2} = 4 \frac{1}{2}$
4. $\frac{3}{5} \times 9 = \frac{27}{5} = 5 \frac{2}{5}$
5. $\frac{1}{3} \times 5 = \frac{5}{3} = 1 \frac{2}{3}$
6. $\frac{3}{4} \times 2 = \frac{6}{4} = \frac{3}{2} = 1 \frac{1}{2}$
7. $\frac{10}{13} \times 9 = \frac{90}{13} = 6 \frac{12}{13}$
8. $\frac{5}{6} \times 7 = \frac{35}{6} = 5 \frac{5}{6}$
9. $\frac{7}{13} \times 3 = \frac{21}{13} = 1 \frac{8}{13}$
10. $\frac{4}{7} \times 8 = \frac{32}{7} = 4 \frac{4}{7}$
11. $2 \frac{2}{5} \times 8 = \frac{12}{5} \times 8 = \frac{96}{5} = 19 \frac{1}{5}$
12. $5 \frac{2}{7} \times 6 \Rightarrow \frac{37}{7} \times 6 = \frac{222}{7} = 31 \frac{5}{7}$
13. $3 \frac{7}{12} \times 6 \Rightarrow \frac{43}{12} \times 6 = \frac{258}{12} = \frac{43}{2} \text{ or } 21 \frac{1}{2}$
14. $6 \frac{2}{35} \times 21 \Rightarrow \frac{212}{35} \times 21 = \frac{212 \times 3}{5} = \frac{636}{5} = 127 \frac{1}{5}$

$$15. 6\frac{5}{18} \times 8 \Rightarrow \frac{113}{18} \times 8 = \frac{113 \times 4}{9} = \frac{452}{9} = 50\frac{2}{9}$$

Exercise 39

$$1. \frac{1}{3} \times \frac{1}{4} = \frac{1}{12}$$

$$2. \frac{4}{7} \times \frac{2}{3} = \frac{8}{21}$$

$$3. \frac{1}{2} \times \frac{4}{5} = \frac{4}{10} \text{ or } \frac{2}{5}$$

$$4. \frac{2}{5} \times \frac{2}{7} = \frac{4}{35}$$

$$5. \frac{5}{9} \times \frac{7}{8} = \frac{35}{72}$$

$$6. \frac{4}{5} \times \frac{1}{9} = \frac{4}{45}$$

$$7. \frac{5}{8} \times \frac{7}{15} = \frac{7}{24}$$

$$8. \frac{10}{11} \times \frac{3}{5} = \frac{3 \times 2}{11 \times 1} = \frac{6}{11}$$

$$9. \frac{3}{8} \times \frac{4}{7} = \frac{3 \times 1}{2 \times 7} = \frac{3}{14}$$

$$10. \frac{8}{13} \times \frac{39}{64} = \frac{1 \times 3}{1 \times 8} = \frac{3}{8}$$

$$11. \frac{4}{7} \times \frac{5}{9} = \frac{20}{63}$$

$$12. \frac{4}{5} \times \frac{11}{13} = \frac{44}{65}$$

$$13. 5\frac{1}{4} \times 4\frac{2}{5} = \frac{21}{4} \times \frac{22}{5} = \frac{462}{20} = 23\frac{1}{10}$$

$$14. 4\frac{2}{3} \times \frac{5}{3} = \frac{14}{3} \times \frac{5}{3} = \frac{70}{9} \text{ or } 7\frac{7}{9}$$

$$15. 4\frac{7}{9} \times 2\frac{2}{5} = \frac{43}{9} \times \frac{12}{5} = \frac{172}{15} = 11\frac{7}{15}$$

$$16. 1\frac{3}{8} \times 3\frac{1}{2} = \frac{11}{8} \times \frac{7}{2} = \frac{77}{16}$$

$$17. 4\frac{5}{6} \times 2\frac{2}{5} = \frac{29}{6} \times \frac{12}{5} = \frac{29 \times 2}{1 \times 5} = \frac{58}{5} \text{ or } 11\frac{3}{5}$$

$$18. 8\frac{1}{2} \times 4\frac{1}{4} = \frac{17}{2} \times \frac{17}{4} = \frac{289}{8} = 36\frac{1}{8}$$

Exercise 40

$$1. 3 \text{ times } \frac{1}{6}$$

$$2. 5 \text{ times } \frac{4}{20}$$

$$3 \times \frac{1}{6} = \frac{1}{2}$$

$$5 \times \frac{4}{20} = 1$$

3. $\frac{9}{10}$ of 30 $\Rightarrow \frac{9}{10} \times 30 = 9 \times 3 = 27$
4. $\frac{4}{5}$ of 15 $\Rightarrow \frac{4}{5} \times 15 = 4 \times 3 = 12$
5. $6 \times \frac{5}{24} = \frac{5}{4}$ or $\frac{1}{4}$
6. $\frac{3}{8} \times \frac{2}{9} = \frac{2}{24}$ or $\frac{1}{12}$
7. $\frac{1}{4}$ of a rupee $\Rightarrow \frac{1}{4} \times 100 = 25$ paise
8. $\frac{3}{4}$ of a day $\Rightarrow \frac{3}{4} \times 24 = 18$ hours
9. $\frac{2}{5} \times 60 = 24$ minutes
10. $\frac{2}{3} \times 12 = 8$ months
11. $\frac{3}{5} \times 100 = 60$ rupees
12. $\frac{5}{9} \times 54 = 5 \times 6 = 30$ meters
13. $\frac{2}{7} \times 7 = 2$ days
14. $\frac{1}{50} \times 1000 = 20$ metres

Exercise 41

Reciprocal :

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

$$2. \frac{1}{4} = 4$$

$$3. \frac{1}{2} = 2$$

$$4. 5 = \frac{1}{5}$$

$$5. \frac{2}{3} = \frac{3}{2}$$

$$6. \frac{3}{4} = \frac{4}{3}$$

$$7. \frac{4}{5} = \frac{5}{4}$$

$$8. 1\frac{4}{5} = \frac{9}{5} = \frac{5}{9}$$

$$9. 2\frac{3}{8} = \frac{19}{8} = \frac{8}{19}$$

$$10. 3\frac{4}{5} = \frac{19}{5} = \frac{5}{19}$$

$$11. \frac{3}{5} \times \frac{5}{3} = \boxed{1} = 1$$

$$12. \frac{12}{13} \times \boxed{\frac{13}{12}} = 1$$

$$13. \frac{1}{15} \times \boxed{15} = 1$$

Exercise 42

$$1. \frac{2}{5} \div 5 = \frac{2}{5} \times \frac{1}{5} = \frac{2}{25}$$

$$2. \frac{3}{4} \div 3 = \frac{3}{4} \times \frac{1}{3} = \frac{1}{4}$$

$$3. \frac{9}{11} \div 21 = \frac{9}{11} \times \frac{1}{21} = \frac{3}{77}$$

$$4. \frac{12}{13} \div 24 = \frac{12}{13} \times \frac{1}{24} = \frac{1}{13} \times \frac{1}{2} = \frac{1}{26}$$

$$5. \frac{15}{28} \div 35 = \frac{15}{28} \times \frac{1}{35} = \frac{3}{196}$$

$$6. \frac{7}{32} \div 42 = \frac{7}{32} \times \frac{1}{42} = \frac{1}{192}$$

$$7. \frac{1}{2} \div 3 = \frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$$

$$8. \frac{14}{15} \div 7 = \frac{14}{15} \times \frac{1}{7} = \frac{2}{15}$$

$$9. \frac{18}{23} \div 9 = \frac{18}{23} \times \frac{1}{9} = \frac{2}{23}$$

10. $8 \div \frac{2}{5} = 8 \times \frac{5}{2} = 5 \times 4 = 20$
11. $63 \div \frac{9}{2} = 63 \times \frac{2}{9} = 7 \times 2 = 14$
12. $72 \div \frac{64}{7} = 72 \times \frac{7}{64} = \frac{63}{8} \text{ or } 7\frac{7}{8}$
13. $\frac{12}{13} \div 60 = \frac{12}{13} \times \frac{1}{60} = \frac{1}{65}$
14. $3\frac{9}{25} \div 14 = \frac{84}{25} \times \frac{1}{14} = \frac{6}{25}$
15. $7\frac{7}{10} \div 55 = \frac{77}{10} \times \frac{1}{55} = \frac{7}{50}$
16. $10\frac{2}{5} \div 24 = \frac{52}{5} \times \frac{1}{24} = \frac{13}{30}$
17. $6\frac{8}{9} \div 62 = \frac{62}{9} \times \frac{1}{62} = \frac{1}{9}$
18. $15\frac{3}{5} \div 39 = \frac{78}{5} \times \frac{1}{39} = \frac{2}{5}$
19. $5\frac{4}{5} \div \frac{11}{15} = \frac{29}{5} \times \frac{15}{11} = \frac{87}{11} = 7\frac{10}{11}$
20. $13\frac{3}{5} \div \frac{1}{2} = \frac{68}{5} \times \frac{2}{1} = \frac{136}{5} \text{ or } 27\frac{1}{5}$
21. $9\frac{7}{8} \div \frac{3}{4} = \frac{79}{8} \times \frac{4}{3} = \frac{79}{6} = 13\frac{1}{6}$

Exercise 43

1. Product $= 8\frac{2}{3} = \frac{26}{3}$
- One number $= \frac{38}{15}$
- Other number $= \frac{26}{3} \div \frac{38}{15}$

$$= \frac{26}{3} \times \frac{15}{38}$$

$$= \frac{65}{19} \text{ or } 3\frac{8}{19}$$

2. One apple cost = ₹ $1\frac{1}{2}$

Collection = ₹ 150

He sold = $150 \div \frac{3}{2}$

$$= 150 \times \frac{2}{3}$$

$$= 100 \text{ apples}$$

$$= 50 \text{ metres}$$

3. Cloth

Sold = $\frac{4}{5}$ of it

$$= \frac{4}{5} \times 50$$

$$= 40 \text{ meters}$$

4. A flask hold = $1\frac{1}{2}$ litres of tea

Mug hold = $\frac{1}{2}$ of tea

Mugs filled = $\frac{3}{2} \div \frac{1}{2}$

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

$$= 3 \text{ mugs}$$

5. One pencil costs = ₹ $2\frac{1}{2}$

The child bought pencils for ₹ 15

$$\begin{aligned}\text{Number of pencils bought} &= 15 \div 2\frac{1}{2} = 15 \div \frac{5}{2} \\ &= 15 \times \frac{2}{5} \\ &= 3 \times 2 \\ &= 6 \text{ pencils}\end{aligned}$$

$$\begin{aligned}6. \text{ Each ticket price} &= ₹ 7\frac{1}{2} \\ &= ₹ \frac{15}{2}\end{aligned}$$

Amount collected = ₹ 900

$$\begin{aligned}\text{Tickets sold} &= 900 \div \frac{15}{2} \\ &= 900 \times \frac{2}{15} \\ &= 120 \text{ tickets}\end{aligned}$$

$$7. \text{ Total milk} = 25 \text{ litres}$$

$$\text{Child got} = \frac{1}{5} \text{ l}$$

$$\begin{aligned}\text{Number of children} &= 25 \div \frac{1}{5} \\ &= 25 \times 5 \\ &= 125 \text{ children}\end{aligned}$$

$$8. \text{ Product} = 3\frac{2}{7} = \frac{23}{7}$$

$$\text{One of them} = 11\frac{1}{2} = \frac{23}{2}$$

$$\begin{aligned}
 \text{Other number} &= \frac{23}{7} \div \frac{23}{2} \\
 &= \frac{23}{7} \times \frac{2}{23} \\
 &= \frac{2}{7}
 \end{aligned}$$

9. A shopkeeper has 100 meters cloth

$$\text{He sold} = \frac{3}{5} \text{ of it}$$

$$\text{He sold} = \frac{3}{5} \times 100$$

$$= 60 \text{ metres}$$

10. Hotel had = 160 guests

$$\frac{2}{5} \text{ of them} = \frac{2}{5} \times 160$$

$$= 2 \times 32$$

$$= 64$$

$$\text{remains} = 160 - 64$$

$$= 96 \text{ womens}$$

Activity Time



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

(a) 3

(b) 8

(c) Yes

(d) $\frac{5}{8}$

(e) like fractions

(f) 1

(g) $\frac{2}{8}$

(h) $\frac{5}{8}$

(i) $\frac{6}{16}, \frac{9}{24}, \frac{12}{32}$

Exercise 44

1. (a) decimal four (b) decimal nine
 (c) decimal one six (d) decimal three one
 (e) decimal four four (f) decimal seven three two
 (g) decimal one four four two (h) decimal six two five
 (i) decimal one nine nine eight
2. (a) 0.2956 (b) 0.4020
 (c) 0.1509 (d) 0.29
 (e) 0.8031 (f) 0.5862
3. (a) $\frac{4}{10} = 0.4$ (b) $\frac{7}{10} = 0.7$
 (c) $\frac{9}{10} = 0.9$ (d) $\frac{3}{100} = 0.03$
 (e) $\frac{17}{100} = 0.17$ (f) $\frac{39}{100} = 0.39$
 (g) $\frac{78}{100} = 0.78$ (h) $\frac{79}{100} = 0.79$
 (i) $\frac{18}{1000} = 0.018$ (j) $\frac{27}{1000} = 0.027$
 (k) $\frac{116}{1000} = 0.116$ (l) $\frac{8912}{100000} = 0.08912$
 (m) $\frac{6125}{100000} = 0.06125$ (n) $\frac{7512}{100000} = 0.07512$
 (o) $\frac{8713}{100000} = 0.08713$ (p) $\frac{12135}{100000} = 0.12135$
 (q) $\frac{3}{10} = 0.3$ (r) $\frac{93}{100} = 0.93$

$$(s) \frac{237}{1000} = 0.237$$

$$(t) \frac{20676}{100000} = 0.20676$$

Exercise 45

1. (a) $0.28 = 0.2 + 0.08$ (b) $0.34 = 0.3 + 0.04$
 (c) $0.56 = 0.5 + 0.06$ (d) $0.76 = 0.7 + 0.06$
 (e) $0.88 = 0.8 + 0.08$ (f) $0.101 = 0.1 + 0.001$
 (g) $0.112 = 0.1 + 0.01 + 0.002$
 (h) $0.189 = 0.1 + 0.08 + 0.009$
 (i) $0.187 = 0.1 + 0.08 + 0.007$
 (j) $0.382 = 0.3 + 0.08 + 0.002$
 (k) $0.4242 = 0.4 + 0.02 + 0.004 + 0.0002$
 (l) $0.5182 = 0.5 + 0.01 + 0.008 + 0.0002$
 (m) $0.7673 = 0.7 + 0.06 + 0.007 + 0.0003$
 (n) $4.721 = 4 + 0.7 + 0.02 + 0.001$
 (o) $6.1671 = 6 + 0.1 + 0.06 + 0.007 + 0.0001$
 (p) $28.312 = 20 + 8 + 0.3 + 0.01 + 0.002$
2. (a) 48.12 — forty eight decimal one two
 (b) 68.13 — sixty eight decimal one three
 (c) 78.87 — seventy eight decimal eight seven
 (d) 4.82 — four decimal eight two
 (e) 14.58 — fourteen decimal five eight
 (f) 111.78 — one hundred eleven decimal seven eight
 (g) 201.79 — two hundred one decimal seven nine
 (h) 412.112 — four hundred twelve decimal one one two
3. (a) $0.139 = 0.1, 0.03, 0.009$ or $\frac{1}{10}, \frac{3}{100}, \frac{9}{1000}$
 (b) $0.7483 = \frac{7}{10}, \frac{4}{100}, \frac{8}{1000}, \frac{2}{10000}$
 (c) $8.312 = 8, \frac{3}{10}, \frac{1}{100}, \frac{2}{1000}$

$$(d) \quad 18.208 = 10, 8, \frac{2}{10}, \frac{8}{1000}$$

$$(e) \quad 204.243 = 200, 4, \frac{2}{10}, \frac{4}{100}, \frac{3}{1000}$$

$$(f) \quad 25046.327 = 20000, 5000, 40, 6, \frac{3}{10}, \frac{2}{100}, \frac{7}{1000}$$

Exercise 46

1. (a) $0.41 > 0.14$ $\left(\because \frac{41}{100} > \frac{14}{100} \right)$
- (b) $0.89 < 0.98$ $\left(\because \frac{89}{100} < \frac{98}{100} \right)$
- (c) $0.325 < 0.365$ $\left(\because \frac{325}{1000} < \frac{365}{1000} \right)$
- (d) $0.814 > 0.199$ $\left(\because \frac{814}{1000} > \frac{199}{1000} \right)$
- (e) $0.75 > 0.698$ $\left(\because \frac{750}{1000} > \frac{698}{1000} \right)$
- (f) $0.37 > 0.189$ $\left(\because \frac{370}{1000} > \frac{189}{1000} \right)$
- (g) $0.325 > 0.14$ $\left(\because \frac{325}{1000} > \frac{140}{1000} \right)$
- (h) $0.18 > 0.125$ $\left(\because \frac{180}{1000} > \frac{125}{1000} \right)$
- (i) $0.001 < 0.1$ $\left(\because \frac{1}{1000} < \frac{100}{1000} \right)$

2. (a) $0.063, 0.36, 0.89, 0.66, 0.569$

$$0.063 = \frac{63}{1000}$$

$$0.36 = \frac{36}{100} = \frac{360}{1000}$$

$$0.89 = \frac{89}{100} = \frac{890}{1000}$$

$$0.66 = \frac{66}{100} = \frac{660}{1000}$$

$$\frac{0.569}{1} = \frac{569}{1000} = \frac{569}{1000}$$

So, 0.063, 0.36, 0.569, 0.66, 0.89

(b) 0.3, 0.8, 0.09, 0.13, 0.98

$$0.3 = \frac{3}{10} = \frac{30}{100}$$

$$0.8 = \frac{8}{10} = \frac{80}{100}$$

$$0.09 = \frac{9}{100}$$

$$0.13 = \frac{13}{100}$$

$$0.98 = \frac{98}{100}$$

0.09, 0.13, 0.3, 0.8, 0.98

(c) 0.026, 0.36, 0.98, 0.77, 0.569

$$0.026 = \frac{26}{1000}$$

$$0.36 = \frac{36}{100} = \frac{360}{1000}$$

$$0.98 = \frac{98}{100} = \frac{980}{1000}$$

$$0.77 = \frac{77}{100} = \frac{770}{1000}$$

$$0.569 = \frac{569}{1000}$$

0.026, 0.36, 0.569, 0.77, 0.98

(d) 0.981, 0.098, 0.89, 0.198, 0.809

$$0.981 = \frac{981}{1000}$$

$$0.098 = \frac{98}{1000}$$

$$0.89 = \frac{89}{100} = \frac{890}{1000}$$

$$0.198 = \frac{198}{1000}$$

$$0.809 = \frac{809}{1000}$$

0.098, 0.198, 0.809, 0.89, 0.981

(e) 0.0631, 0.092, 0.351, 0.891, 0.039

$$0.0631 = \frac{631}{10000}$$

$$0.092 = \frac{92}{1000} = \frac{920}{10000}$$

$$0.351 = \frac{351}{1000} = \frac{3510}{10000}$$

$$0.891 = \frac{891}{1000} = \frac{8910}{10000}$$

$$0.039 = \frac{39}{1000} = \frac{390}{10000}$$

0.039, 0.0631, 0.092, 0.351, 0.891

(f) 0.321, 0.63, 0.93, 0.05, 0.83

$$0.321 = \frac{321}{1000}$$

$$0.63 = \frac{63}{100} = \frac{630}{1000}$$

$$0.93 = \frac{93}{100} = \frac{930}{1000}$$

$$0.05 = \frac{5}{100} = \frac{50}{1000}$$

$$0.83 = \frac{83}{100} = \frac{830}{1000}$$

0.05, 0.321, 0.63, 0.83, 0.93

3. (a) 0.7, 0.05, 0.92, 0.65, 0.12

$$0.7 = \frac{7}{10} = \frac{70}{100}$$

$$0.92 = \frac{92}{100}$$

$$0.05 = \frac{5}{100}$$

$$0.65 = \frac{65}{100}$$

$$0.12 = \frac{12}{100}$$

0.92, 0.7, 0.65, 0.12, 0.05

(b) 0.92, 0.7, 0.65, 0.12, 0.05

$$0.92 = \frac{92}{100}$$

$$0.7 = \frac{7}{10} = \frac{70}{100}$$

$$0.65 = \frac{65}{100}$$

$$0.12 = \frac{12}{100}$$

$$0.05 = \frac{5}{100}$$

0.92, 0.7, 0.65, 0.12, 0.05

(c) 0.35, 0.65, 0.85, 0.15, 0.015

$$0.35 = \frac{35}{100} = \frac{350}{1000}$$

$$0.65 = \frac{65}{100} = \frac{650}{1000}$$

$$0.85 = \frac{85}{100} = \frac{850}{1000}$$

$$0.15 = \frac{15}{100} = \frac{150}{1000}$$

$$0.015 = \frac{15}{1000}$$

0.85, 0.65, 0.35, 0.15, 0.015

(d) 0.85, 0.45, 0.65, 0.25, 0.02

$$0.85 = \frac{85}{100}$$

$$0.45 = \frac{45}{100}$$

$$0.65 = \frac{65}{100}$$

$$0.25 = \frac{25}{100}$$

$$0.02 = \frac{2}{100}$$

0.85, 0.65, 0.45, 0.25, 0.02

(e) 0.111, 0.011, 0.001, 0.999, 0.811,
0.999, 0.811, 0.111, 0.011, 0.001

Exercise 47

1. (a)
$$\begin{array}{r} 1.3 \\ + 5.9 \\ \hline 7.2 \end{array}$$
- (b)
$$\begin{array}{r} 8.2 \\ + 1.7 \\ \hline 9.9 \end{array}$$
- (c)
$$\begin{array}{r} 28.82 \\ + 1.08 \\ \hline 29.90 \end{array}$$
- (d)
$$\begin{array}{r} 112.31 \\ + 26.89 \\ \hline 139.20 \end{array}$$
- (e)
$$\begin{array}{r} 12.80 \\ + 3.75 \\ \hline 16.55 \end{array}$$
- (f)
$$\begin{array}{r} 412.93 \\ + 23.80 \\ \hline 436.73 \end{array}$$
- (g)
$$\begin{array}{r} 357.13 \\ + 243.77 \\ + 56.00 \\ \hline 656.90 \end{array}$$
- (h)
$$\begin{array}{r} 10.050 \\ + 100.005 \\ + 1000.500 \\ \hline 1110.555 \end{array}$$
- (i)
$$\begin{array}{r} 2020.300 \\ + 850.650 \\ + 3445.713 \\ \hline 6316.663 \end{array}$$
2. (a)
$$\begin{array}{r} 4.270 \\ + 2.329 \\ + 18.039 \\ + 88.100 \\ \hline 112.738 \end{array}$$
- (b)
$$\begin{array}{r} 69.390 \\ + 84.630 \\ + 02.922 \\ + 08.293 \\ \hline 165.235 \end{array}$$
- (c)
$$\begin{array}{r} 0.323 \\ + 1.645 \\ + 13.850 \\ + 6.800 \\ \hline 22.618 \end{array}$$
- (d)
$$\begin{array}{r} 112.910 \\ + 211.300 \\ + 69.380 \\ + 85.112 \\ \hline 478.702 \end{array}$$
- (e)
$$\begin{array}{r} 1.121 \\ + 2.870 \\ + 3.009 \\ + 16.797 \\ \hline 23.797 \end{array}$$
- (f)
$$\begin{array}{r} 0.888 \\ + 8.000 \\ + 0.800 \\ + 0.880 \\ \hline 10.568 \end{array}$$

$$\begin{array}{r}
 3. \quad (a) \quad 0.9 \\
 \quad \quad - 0.4 \\
 \hline
 \quad \quad 0.5 \\
 \hline
 \end{array}
 \qquad
 \begin{array}{r}
 (b) \quad 1.3 \\
 \quad \quad - 0.7 \\
 \hline
 \quad \quad 0.6 \\
 \hline
 \end{array}
 \qquad
 \begin{array}{r}
 (c) \quad 2.6 \\
 \quad \quad - 1.8 \\
 \hline
 \quad \quad 0.8 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 (d) \quad 48.32 \\
 \quad \quad - 33.48 \\
 \hline
 \quad \quad 14.84 \\
 \hline
 \end{array}
 \qquad
 \begin{array}{r}
 (e) \quad 149.130 \\
 \quad \quad - 008.864 \\
 \hline
 \quad \quad 140.266 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 (f) \quad 141.650 \\
 \quad \quad - 053.891 \\
 \hline
 \quad \quad 87.759 \\
 \hline
 \end{array}
 \qquad
 \begin{array}{r}
 (g) \quad 373.43 \\
 \quad \quad - 272.69 \\
 \hline
 \quad \quad 100.74 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 (h) \quad 512.48 \\
 \quad \quad - 221.83 \\
 \hline
 \quad \quad 290.65 \\
 \hline
 \end{array}
 \qquad
 \begin{array}{r}
 (i) \quad 312.710 \\
 \quad \quad - 211.893 \\
 \hline
 \quad \quad 100.817 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 4. \quad (a) \quad 49.4 \\
 \quad \quad - 39.7 \\
 \hline
 \quad \quad 9.7 \\
 \hline
 \end{array}
 \qquad
 \begin{array}{r}
 (b) \quad 148.52 \\
 \quad \quad - 89.88 \\
 \hline
 \quad \quad 58.64 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 (c) \quad 421.50 \\
 \quad \quad - 315.65 \\
 \hline
 \quad \quad 105.85 \\
 \hline
 \end{array}
 \qquad
 \begin{array}{r}
 (d) \quad 36.13 \\
 \quad \quad - 28.85 \\
 \hline
 \quad \quad 7.28 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 (e) \quad 61.00 \\
 \quad \quad - 45.62 \\
 \hline
 \quad \quad 15.38 \\
 \hline
 \end{array}
 \qquad
 \begin{array}{r}
 (f) \quad 82.00 \\
 \quad \quad - 69.98 \\
 \hline
 \quad \quad 12.02 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 (g) \quad 442.1 \\
 \quad \quad - 230.8 \\
 \hline
 \quad \quad 211.3 \\
 \hline
 \end{array}
 \qquad
 \begin{array}{r}
 (h) \quad 412.3 \\
 \quad \quad - 213.9 \\
 \hline
 \quad \quad 198.4 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 (i) \quad 272.00 \\
 \quad \quad - 181.45 \\
 \hline
 \quad \quad 90.55 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 5. \quad 1000.00 \\
 - 558.07 \\
 \hline
 441.93
 \end{array}$$

$$\begin{array}{r}
 6. \quad 3.01 \\
 - 1.03 \\
 \hline
 1.98
 \end{array}$$

7. Total tomatoes = 10 kg

$$\begin{array}{r}
 \text{Tomatoes used} = 8.250 \text{ kg} \quad 10.00 \\
 - 8.250 \\
 \hline
 1.750
 \end{array}$$

Tomatoes left 1.750 kg

8. Amit spend on

$$\text{Groceries} = 850.75$$

$$\text{Vegetables} = +250.50$$

$$\text{Milk} = +750.00$$

$$\text{₹ } 1851.25$$

$$\text{Money he had} = 2000.00$$

$$\text{Money he is left with} = 1851.25$$

$$= \text{₹ } 148.75$$

Exercise 48

1. (a) $1\text{m} = 100 \text{ cm}$ (b) $1\text{km} = 1000 \text{ m}$

(c) $1\text{cm} = 10\text{mm}$ (d) $1\text{kg} = 1000\text{g}$

(e) $1\text{g} = 1000\text{mg}$ (f) $1\text{l} = 1000\text{ml}$

(g) $1\text{l} = 100\text{cl}$ (h) $1\text{dam} = 10\text{m}$

(i) $1\text{hg} = 100\text{g}$

2. (a) $4\text{m } 5\text{cm}$ to cm

$$1\text{m} = 100 \text{ cm}$$

$$400 + 5 = 405\text{cm}$$

(b) $6\text{cm } 6\text{mm}$ to mm

$$1\text{cm} = 10\text{mm}$$

$$6 \times 10 + 6 = 66\text{mm}$$

(c) $5\text{km } 325\text{m}$ to m

$$1\text{km} = 1000\text{m}$$

$$5\text{km} = 5000\text{m}$$

$$5000 + 325 = 5325\text{m}$$

- (d) 8l 30ml to ml

$$1\text{l} = 1000\text{ml}$$

$$8000 + 30 = 8030\text{ml}$$

- (e) 18cm 14mm to mm

$$1\text{cm} = 10\text{mm}$$

$$180 + 14 = 194\text{mm}$$

- (f) 12kg 15g to g

$$1\text{kg} = 1000\text{g}$$

$$12\text{kg} = 12000\text{g}$$

$$12000 + 15 = 12015\text{g}$$

- (g) 80m 18cm to cm

$$1\text{m} = 100\text{cm}$$

$$80\text{m} = 8000\text{cm}$$

$$8000 + 18 = 8018\text{cm}$$

- (h) 333kg 42g to g

$$1\text{kg} = 1000\text{g}$$

$$333\text{kg} = 333000\text{g}$$

$$333000 + 42 = 333042\text{g}$$

- (i) 634ℓ 4ml to ml

$$1\text{ℓ} = 1000\text{ml}$$

$$634\text{ℓ} = 634000\text{ml}$$

$$634000 + 4 = 634004\text{ml}$$

3. (a) 60 mm to cm

$$1\text{mm} = \frac{1}{10}\text{cm}$$

$$60\text{mm} = \frac{60}{10}\text{cm} = 6\text{cm}$$

- (b) 800 cm = m

$$1\text{cm} = \frac{1}{100}\text{m}$$

$$800\text{cm} = \frac{800}{100} \text{ m} = 8\text{m}$$

(c) $5000\text{m} = \text{km}$

$$1\text{m} = \frac{1}{1000} \text{ km}$$

$$5000\text{m} = \frac{5000}{1000} \text{ km} = 5\text{km}$$

(d) $3000\text{ml} = \ell$

$$1\text{ml} = \frac{1}{1000} \ell$$

$$3000\text{ml} = \frac{3000}{1000} \ell = 3\ell$$

(e) $4000\text{g} = \text{kg}$

$$1\text{g} = \frac{1}{1000} \text{ kg}$$

$$4000\text{g} = \frac{4000}{1000} \text{ kg} = 4\text{kg}$$

(f) $2000\text{mg} = \text{g}$

$$1\text{mg} = \frac{1}{1000} \text{ g}$$

$$2000\text{mg} = \frac{2000}{1000} \text{ g} = 2\text{g}$$

4. (a) 683 cm to m and cm

$$1\text{cm} = \frac{1}{100} \text{ m}$$

$$683\text{cm} = \frac{683}{100} \text{ m}$$

$$\therefore 6\text{m } 83\text{cm}$$

(b) 82mm to cm and mm

$$1\text{mm} = \frac{1}{10}\text{cm}$$

$$82\text{mm} = \frac{82}{10}\text{cm}$$

8cm 2mm

(c) 457mm to cm and mm

$$1\text{mm} = \frac{1}{10}\text{cm}$$

$$457\text{mm} = \frac{457}{10}\text{cm}$$

45cm 7mm

(d) 23230 m to km and m

$$1\text{m} = \frac{1}{1000}\text{km}$$

$$23230\text{m} = \frac{23230}{1000}\text{km}$$

$$= 23\text{km } 230\text{m}$$

(e) 1658m to km and m

$$1\text{m} = \frac{1}{1000}\text{km}$$

$$1658\text{m} = \frac{1658}{1000}\text{km}$$

$$= 1\text{km } 658\text{m}$$

(f) 16725g to kg and g

$$1\text{g} = \frac{1}{1000}\text{kg}$$

$$16725\text{g} = \frac{16725}{1000}\text{kg}$$

$$= 16\text{kg } 725\text{g}$$

Exercise 49

$$\begin{array}{r} 1. \quad (a) \quad \begin{array}{rr} \text{km} & \text{m} \\ 52 & 516 \\ + 67 & 835 \\ \hline 120 & 351 \end{array} \end{array}$$

$$(c) \quad \begin{array}{rr} \text{kg} & \text{g} \\ 45 & 375 \\ + 30 & 285 \\ \hline 75 & 660 \end{array}$$

$$(e) \quad \begin{array}{rr} \ell & \text{m}\ell \\ 390 & 239 \\ + 195 & 325 \\ \hline 585 & 564 \end{array}$$

$$(b) \quad \begin{array}{rr} \text{km} & \text{m} \\ 384 & 375 \\ + 289 & 375 \\ \hline 673 & 750 \end{array}$$

$$(d) \quad \begin{array}{rr} \text{kg} & \text{g} \\ 149 & 387 \\ + 244 & 276 \\ \hline 393 & 663 \end{array}$$

$$(f) \quad \begin{array}{rr} \ell & \text{m}\ell \\ 149 & 367 \\ + 343 & 255 \\ \hline 492 & 622 \end{array}$$

Difference

$$2. \quad (a) \quad \begin{array}{rr} \text{km} & \text{m} \\ 816 & 230 \\ - 765 & 385 \\ \hline 50 & 845 \end{array}$$

$$(c) \quad \begin{array}{rr} \ell & \text{m}\ell \\ 151 & 230 \\ - 75 & 385 \\ \hline 75 & 845 \end{array}$$

$$(b) \quad \begin{array}{rr} \text{kg} & \text{g} \\ 615 & 305 \\ - 378 & 816 \\ \hline 236 & 489 \end{array}$$

Exercise 50

$$1. \quad (a) \quad \begin{array}{rr} \text{m} & \text{cm} \\ 45 & 63 \\ \times & 2 \\ \hline 91 & 26 \end{array}$$

$$(b) \quad \begin{array}{rr} \text{m} & \text{cm} \\ 36 & 91 \\ \times & 7 \\ \hline 258 & 37 \end{array}$$

$$\begin{array}{r}
 \text{(c)} \quad \begin{array}{rr} \text{m} & \text{cm} \\ 26 & 45 \\ \times & 6 \\ \hline 158 & 70 \end{array}
 \end{array}$$

$$\begin{array}{r}
 \text{(d)} \quad \begin{array}{rr} \text{km} & \text{m} \\ 22 & 275 \\ \times & 4 \\ \hline 89 & 100 \end{array}
 \end{array}$$

$$\begin{array}{r}
 \text{(e)} \quad \begin{array}{rr} \text{km} & \text{m} \\ 96 & 185 \\ \times & 8 \\ \hline 763 & 480 \end{array}
 \end{array}$$

$$\begin{array}{r}
 \text{(f)} \quad \begin{array}{rr} \text{m} & \text{cm} \\ 135 & 126 \\ \times & 7 \\ \hline 945 & 882 \end{array}
 \end{array}$$

$$\begin{array}{r}
 \text{(g)} \quad \begin{array}{rr} \text{l} & \text{ml} \\ 38 & 250 \\ \times & 3 \\ \hline 114 & 750 \end{array}
 \end{array}$$

$$\begin{array}{r}
 \text{(h)} \quad \begin{array}{rr} \text{kg} & \text{g} \\ 21 & 450 \\ \times & 12 \\ \hline 42 & 900 \\ 214 & 500 \\ \hline 257 & 400 \end{array}
 \end{array}$$

$$\begin{array}{r}
 \text{(i)} \quad \begin{array}{rr} \text{kg} & \text{g} \\ 85 & 854 \\ \times & 18 \\ \hline 686 & 832 \\ 858 & 540 \\ \hline 1545 & 372 \end{array}
 \end{array}$$

$$2. \quad \text{(a)} \quad 4 \overline{) 28 \, 64} 7 \text{m} 16 \text{cm}$$

$$\begin{array}{r}
 28 \\
 \hline
 6 \\
 4 \\
 \hline
 24 \\
 24 \\
 \hline
 \times \\
 \hline
 \end{array}$$

7.16 or 7m 16cm

(b)

$$\begin{array}{r}
 9 \overline{) 81\,189} \, 9.021 \\
 \underline{81} \\
 1 \\
 \underline{0} \\
 18 \\
 \underline{18} \\
 9 \\
 \underline{9} \\
 \times \\
 \hline
 \end{array}$$

Ans. 9kg 24gm

(c) 121612ml $\div$ 6

$$\begin{array}{r}
 6 \overline{) 12\,1612} \, 2.102 \\
 \underline{12} \\
 6 \\
 \underline{6} \\
 1 \\
 \underline{0} \\
 12 \\
 \underline{12} \\
 \times \\
 \hline
 \end{array}$$

Ans. 24 102ml

(d) 281km 862m $\div$ 4

$$\begin{array}{r}
 14 \overline{) 281.862} \, 20.133 \\
 \underline{28} \\
 1 \\
 \underline{0} \\
 18 \\
 \underline{14} \\
 46 \\
 \underline{42} \\
 42 \\
 \underline{42} \\
 \times \\
 \hline
 \end{array}$$

Ans. 20km 133m

(e) $3950\text{kg } 592\text{g} \div 32$

$$\begin{array}{r}
 32 \overline{) 3950 \ 592} \quad 123.456 \\
 \underline{32} \\
 75 \\
 \underline{64} \\
 110 \\
 \underline{96} \\
 145 \\
 \underline{128} \\
 179 \\
 \underline{160} \\
 192 \\
 \underline{192} \\
 \times \\
 \hline
 \end{array}$$

Ans. $123\text{kg } 456\text{g}$

(f)

$$\begin{array}{r}
 8 \overline{) 192800} \quad 24.1 \\
 \underline{16} \\
 32 \\
 \underline{32} \\
 8 \\
 \underline{8} \\
 0 \\
 \hline
 \end{array}$$

Ans. $24\ell \ 1\text{ml}$

Exercise 51

1. Raja bought

	kg	g
Sugar	100	250
rice	+ 40	800
	141	050

Total weight $141\text{kg } 5\text{g}$

2. Milk

	l	ml
Total =	50	000
Sold =	– 32	500
Left =	17	500

3. Mr. Saxena travelled by

	km	m
foot	2	375
bus	7	725
train	+ 15	125
	25	225

Total distance travelled by Mr. Sasena was 25km 225m

4. Heap of wheat

	kg	g
together	50	250
one heap	–32	525
	17	725

Ans. : another heap is 17.725kg.

5. Mangoes

	kg	g
Total	320	400
discard	–5	300
remaining	315	100
Remaining	315	100
Sold	–289	400
	25	700

Ans. : Weight left is 25kg 700gm or 25.7kg

6.

	l	ml
Total oil	5	250
taken out	2	100
oil spoiled	1	200

$$\begin{aligned}\text{Remaining oil} &= 2 \ell 100\text{ml} + 1 \ell 200 \text{ ml} - 5 \ell 250 \text{ ml} \\ &= 3 \ell 300\text{ml} - 5 \ell 250 \text{ ml}\end{aligned}$$

$$\begin{array}{r} 5 \ 250 \\ - 3 \ 300 \\ \hline 1 \ 950 \end{array}$$

Ans. : Remaining oil is 3ℓ 300ml

7. Wood pieces

one 2 m 20 cm or 220cm

(1 m = 100cm; 2m = 200cm)

another = 4m 60cm or 460cm

Total wood = 220 + 460 = 680cm

Wood painted = 225cm

Wood left = 680 – 225 = 455cm or 4.55m

Formative Assessment V

- | | | | |
|--------------|-----------|--------|--------|
| 1. (a) meter | (b) km | (c) cm | (g) gm |
| (e) kg | (f) litre | (g) mg | (h) ml |
| (i) ft | (j) meter | | |

2. Length

Kilometre
Hectometre
Decametre
Metre
Decimetre
Centimetre
Millimetre

Weight

Kilogram
Hectogram
Decagram
Gram
Decigram
Centigram
Milligram

Capacity

Kilolitre
Hectolitre
Decalitre
Litre
Decilitre
Centilitre
Millilitre

Multiple Choice Questions (M.C.Q.)

- (i) 4m 75cm (∴ 1m = 100cm)
- (iii) 12140mg (1g = 100mg)
- (iii) 15kg 645 g
- (ii) 8.40m
- (i) 15kg 635g

$$\begin{array}{r} \text{kg} \quad \text{g} \\ 3 \ 160 \\ + 12 \ 475 \\ \hline 15 \ 635 \end{array}$$

Activity Time

1. Height

$$\text{Sam} = 80 \text{ cm}$$

$$\text{Rahul} = 160 \text{ cm}$$

$$\text{Sum} = 240 \text{ cm}$$

$$\begin{aligned}\text{Anuj height} &= \text{sum} \div 2 \\ &= 240 \div 2 = 120 \text{ cm}\end{aligned}$$

$$\begin{aligned}2. \text{ Anu's height} &= 156 \text{ cm} \\ &= -29 \text{ cm}\end{aligned}$$

$$\text{Tina's height} = 127 \text{ cm}$$

$$\text{Maggie's height} = 127 + 16 = 143 \text{ cm}$$

$$(a) \text{ Tina} \quad (b) 127 \text{ cm} \quad (c) 143 \text{ cm}$$

$$\begin{aligned}3. \text{ Box A weight} &= 510 \text{ g} \\ &+ 120\end{aligned}$$

$$(a) \text{ Box B weight} = 630 \text{ g}$$

$$\begin{aligned}\text{Box B weight} &630 \text{ g} \\ &+ 89 \text{ g}\end{aligned}$$

$$(b) \text{ Box C weight} \quad \underline{\underline{729 \text{ g}}}$$

12

Measurement of Time

Exercise 52

1. (a) 4:30 (b) 5:40 (c) 8:25 (d) 11:55
3. (a) 8:15 (b) 12:45 (c) 10:50 (d) 5:35
- (e) 7:20 (f) 8:50
4. (a) 5 minutes past 6 (b) 15 minutes past 6
- (c) 30 minutes past 8 (d) 10 minutes past 10
- (e) 15 minutes to 12 (f) 5 minutes past 1

Exercise 53

1. (a) 4 hours
 1 hour = 60 minutes
 4 hours = $4 \times 60 = 240$ minutes
- (b) 6 hours 25 minutes
 1 hour = 60 minutes
 4 hours = 6×60 minutes
 = 360 minutes
 = $360 + 25$
 = 385 minutes
- (c) 11 hours 49 minutes
 1 hour = 60 minutes
 11 hours = $11 \times 60 = 660$ minutes
 = $660 + 49 = 709$ minutes
- (d) 12 hours 15 minutes
 1 hour = 60 minutes
 12 hours = $12 \times 60 = 720$ minutes
 = $720 + 15 = 735$ minutes
2. (a) 6 hours 45 minutes 15 seconds
 1 hour = 60 minutes
 6 hours = $6 \times 60 = 360$ minutes

$$= 360 + 45 = 405 \text{ minutes}$$

$$1 \text{ minute} = 60 \text{ seconds}$$

$$405 \text{ min.} = 405 \times 60 = 24300 \text{ seconds}$$

$$= 24300 + 15 = 24315 \text{ seconds}$$

(b) 8 hour 30 minutes 20 seconds

$$1 \text{ hour} = 60 \text{ minutes}$$

$$8 \text{ hours} = 8 \times 60 = 480 \text{ minutes}$$

$$= 480 + 30 = 510 \text{ minutes}$$

$$1 \text{ minutes} = 60 \text{ seconds}$$

$$510 \text{ minutes} = 510 \times 60 = 30600 \text{ seconds}$$

$$= 30600 + 20 = 30620 \text{ seconds}$$

(c) 10 hours 35 minutes 16 seconds

$$1 \text{ hour} = 60 \text{ minutes}$$

$$10 \text{ hours} = 10 \times 60 = 600 \text{ minutes}$$

$$= 600 + 35 = 635 \text{ minutes}$$

$$1 \text{ minnute} = 60 \text{ seconds}$$

$$635 \text{ min.} = 635 \times 60 = 38100 \text{ seconds}$$

$$= 38100 + 16 = 38116 \text{ seconds}$$

3. (a) 60 minutes = 1 hour

$$\begin{array}{r} 60 \overline{) 242} \quad 4 \\ \underline{240} \\ 2 \end{array}$$

4 hour 2 minutes

(b) 60 minutes = 1 hour

$$\begin{array}{r} 60 \overline{) 940} \quad 15 \\ \underline{60} \\ 340 \\ \underline{300} \\ 40 \end{array}$$

15 hours 40 minutes

(c) 872 minutes

$$\begin{array}{r} 60 \overline{) 872} 14 \\ \underline{60} \\ 270 \\ \underline{240} \\ 30 \end{array}$$

14 hours 30 minutes

(d)
$$\begin{array}{r} 60 \overline{) 345} 5 \\ \underline{300} \\ 45 \end{array}$$

5 hours 45 minutes

(e)
$$\begin{array}{r} 60 \overline{) 1034} 17 \\ \underline{60} \\ 434 \\ \underline{420} \\ 14 \end{array}$$

17 hours 14 minutes

(f)
$$\begin{array}{r} 60 \overline{) 1244} 20 \\ \underline{120} \\ 4 \\ \underline{0} \\ 44 \end{array}$$

20 hours 44 minutes

4. (a) 60 seconds = 1 minutes

$$\begin{array}{r} 60 \overline{) 3760} 62 \\ \underline{360} \\ 160 \\ \underline{120} \\ 40 \end{array}$$

62 minutes 40 seconds

$$\begin{array}{r} 60 \overline{) 62} 1 \\ \underline{60} \\ 2 \end{array}$$

So, 1 hour 2 minutes 40 seconds

(b)

$$\begin{array}{r} 60 \overline{) 8758} 145 \\ \underline{60} \\ 275 \\ \underline{240} \\ 358 \\ \underline{300} \\ 58 \end{array}$$

145 minutes 59 seconds

60 minutes = 1 hour

$$\begin{array}{r} 60 \overline{) 145} 2 \\ \underline{120} \\ 25 \end{array}$$

2 hours 25 minutes 58 seconds

(c)

$$\begin{array}{r} 60 \overline{) 2738} 45 \\ \underline{240} \\ 338 \\ \underline{300} \\ 38 \end{array}$$

45 minutes 38 seconds

Exercise 54

1. (a) 6:00 am (b) 4:00pm (c) 7:15pm (d) 0:15am
2. (a) 820 hours (b) 1245 hours
(c) 1515 hours (d) 00:07 hours
(e) 1830 hours (f) 2200 hours
3. (a) 3:00 am (b) 10:00am (c) 12:30pm (d) 3:05pm

4. (a) 1 week = 7 days

$$\begin{array}{r} 7 \overline{) 80} 11 \\ \underline{7} \\ 10 \\ \underline{7} \\ 3 \end{array}$$

11 week 3 days

(b) 65 days

$$\begin{array}{r} 7 \overline{) 65} 9 \\ \underline{63} \\ 2 \end{array}$$

9 weeks 2 days

(c) 95 days

$$\begin{array}{r} 7 \overline{) 95} 13 \\ \underline{7} \\ 25 \\ \underline{21} \\ 4 \end{array}$$

13 weeks 4 days

(d) 167 days

$$\begin{array}{r} 7 \overline{) 167} 23 \\ \underline{14} \\ 27 \\ \underline{21} \\ 6 \end{array}$$

23 weeks 6 days

Exercise 55

1. (a)

Min	Sec
10	30
+ 5	45
<u>15</u>	<u>75</u>

15 min 75 sec.

(b)

Min	Sec
2	35
+ 3	50
<u>5</u>	<u>85</u>

5 min 85 sec.

	Min	Sec
	2	38
+	3	49
	5	87

5 min 87 sec.

	Hr.	Min	Sec
	10	20	30
+	9	18	36
	19	38	66

19 hours 38 min 66 sec.

	Hr.	Min	Sec
	12	40	45
+	5	15	30
	17	55	75

17 hours 55 min 75 sec.

	Hr.	Min	Sec
	15	16	17
+	20	30	40
	35	46	51

35 hours 46 min 51 sec.

2. (a)

Yr	M
10	30
+	5
	45
	15
	75

15 years 75 months
 $75 = 12 \times 6 + 3$ ($\therefore$ 12 months = 1 year)
so, $15 + 6 = 21$
21 years 3 months

(b)

Yr	M
12	4
+	4
	12
	16
	16

16 years 16 months
 $16 = 12 + 4$ ($\therefore$ 12 months = 1 year)
so, $16 + 1 = 17$
17 years 4 months

(c)

Yr	M
14	10
+	15
	7
	29
	17

29 years 17 months
 $17 = 12 + 5$ ($\therefore$ 12 months = 1 year)
so, $29 + 1 = 30$
30 years 5 months

3. (a)

Min	Sec
35	40
-	10
	29
	25
	11

(b)

Min	Sec
25	35
-	17
	15
	8
	20

$$\begin{array}{r}
 \text{(c)} \quad \text{Hr.} \quad \text{Min} \quad \text{Sec} \\
 37 \quad 45 \quad 30 \\
 - 18 \quad 25 \quad 15 \\
 \hline
 19 \quad 20 \quad 15
 \end{array}$$

$$\begin{array}{r}
 4. \quad \text{(a)} \quad \text{Min} \quad \text{Sec} \\
 34 \quad 20 \\
 - 12 \quad 10 \\
 \hline
 22 \quad 10
 \end{array}
 \quad 22 \text{ minutes } 10 \text{ seconds}$$

$$\begin{array}{r}
 \text{(b)} \quad \text{Hr.} \quad \text{Min} \quad \text{Sec} \\
 11 \quad 15 \quad 20 \\
 - 4 \quad 20 \quad 30 \\
 \hline
 6 \quad 54 \quad 50
 \end{array}
 \quad 6 \text{ hours } 54 \text{ minutes } 50 \text{ seconds}$$

$$\begin{array}{r}
 \text{(c)} \quad \text{Hr.} \quad \text{Min} \quad \text{Sec} \\
 25 \quad 25 \quad 25 \\
 + 15 \quad 35 \quad 35 \\
 \hline
 9 \quad 49 \quad 50
 \end{array}$$

5. Namita travelled by

$$\begin{array}{r}
 \text{bus} \quad 5 \quad 20 \\
 \text{train} \quad + \quad 4 \quad 55 \\
 \hline
 9 \quad 75
 \end{array}$$

60 minutes = 1 hour

$$75 = 60 + 15 = 1 \text{ hour } 15 \text{ min.}$$

So, 10 hours 15 minutes

6. Programme ends at = 1:15 pm or 1315 hrs

Programme starts at = 11:15 or 1115 hours

$$\begin{array}{r}
 \text{Length of programme} \quad = 1315 \\
 - 1115 \\
 \hline
 2:00
 \end{array}$$

So, its 2 hours.

7. Nikita reaches her school at = 7:45

Time taken = 50

Exercise 56

- | | | | |
|---------------|--------------|-------------|------------|
| 1. ₹ 8 = 800p | 2. 1000p | 3. ₹ 65 | 4. 10525P |
| 5. 17358P | 6. 32476P | 7. ₹ 35.65 | 8. ₹ 46.85 |
| 9. ₹ 98.9. | 10. ₹ 14.980 | 11. ₹ 2.960 | |

Exercise 57**Find the sum :**

$$\begin{array}{r} 1. \quad \text{₹ } 55 \\ + \text{₹ } 48 \\ \hline \text{₹ } 103 \end{array}$$

$$\begin{array}{r} 2. \quad \text{₹ } 183 \\ + \text{₹ } 165 \\ \hline \text{₹ } 348 \end{array}$$

$$\begin{array}{r} 3. \quad \text{₹ } 278 \\ + \text{₹ } 389 \\ \hline \text{₹ } 667 \end{array}$$

$$\begin{array}{r} 4. \quad \text{₹ } 600 \\ + \text{₹ } 630 \\ \hline \text{₹ } 1230 \end{array}$$

$$\begin{array}{r} 5. \quad \text{₹ } 64.638 \\ + \text{₹ } 23.083 \\ \hline \text{₹ } 87.721 \end{array}$$

$$\begin{array}{r} 6. \quad \text{₹ } 235.75 \\ + \text{₹ } 445.85 \\ \hline \text{₹ } 681.90 \end{array}$$

$$\begin{array}{r} 7. \quad \text{₹ } 384.70 \\ + \text{₹ } 355.45 \\ \hline \text{₹ } 740.15 \end{array}$$

$$\begin{array}{r} 8. \quad \text{₹ } 325.90 \\ + \text{₹ } 365.75 \\ \hline \text{₹ } 691.65 \end{array}$$

Subtract

$$\begin{array}{r} 9. \quad \text{₹ } 90 \\ - \text{₹ } 46 \\ \hline \text{₹ } 44 \end{array}$$

$$\begin{array}{r} 10. \quad \text{₹ } 195 \\ - \text{₹ } 95 \\ \hline \text{₹ } 100 \end{array}$$

$$\begin{array}{r}
 11 \quad ₹ 3700 \\
 \underline{- ₹ 1850} \\
 ₹ 1850
 \end{array}$$

$$\begin{array}{r}
 12. \quad ₹ 4500 \\
 \underline{- ₹ 2775} \\
 ₹ 1725
 \end{array}$$

$$\begin{array}{r}
 13. \quad ₹ 555.65 \\
 \underline{- ₹ 270.95} \\
 ₹ 284.70
 \end{array}$$

$$\begin{array}{r}
 14. \quad ₹ 700.50 \\
 \underline{- ₹ 245.78} \\
 ₹ 454.72
 \end{array}$$

$$\begin{array}{r}
 15. \quad ₹ 860.95 \\
 \underline{- ₹ 640.45} \\
 ₹ 220.50
 \end{array}$$

Exercise 58

1. Veena buy fruits

$$\begin{array}{rcl}
 2 \text{ kg apple cost} & = & ₹ 250 \\
 1 \text{ dozen banana cost} & = & ₹ 50 \\
 3 \text{ kg oranges cost} & = & ₹ 120 \\
 \text{Sum} & = & \underline{₹ 420}
 \end{array}$$

$$\begin{array}{rcl}
 \text{She gave} & = & ₹ 500 \\
 \text{sum} & = & ₹ 420 \\
 \text{Shopkeeper return} & = & \underline{₹ 80}
 \end{array}$$

2. Ajay bought

$$\begin{array}{rcl}
 \text{Shirt} & = & ₹ 325 \quad 95P \\
 \text{Jeans} & = & ₹ 525 \quad 95P \\
 \text{He paid} & = & \underline{₹ 851 \quad 90P}
 \end{array}$$

3. Meenal bought 6 pens

$$\begin{array}{l}
 1 \text{ pen cost} = ₹ 10.50 \\
 6 \text{ pen costs} = ₹ 6 \times 10.50 = 63.00
 \end{array}$$

$$\begin{array}{rcl}
 \text{She gave} & = & ₹ 100 \\
 \text{Sum} & = & \underline{- ₹ 63} \\
 \text{Amount she will get} & = & \underline{₹ 37}
 \end{array}$$

4. Sonal purchased

Hindi book = ₹125 25P

English book = + ₹170 50P

Maths book = + ₹225 75P

She spent on these = ₹521 50P

She spent on books is ₹521.50

14

Geometry

Exercise 59

- (a) three (b) five (c) five (d) four
- (a) line segment (b) ray (c) line
- (a) straight line $\overleftrightarrow{PQ}$ (b) Ray $\overrightarrow{XY}$
(c) line segment $\overline{CD}$
- (a) $\angle ABC$
(b) $\angle OPQ$ and $\angle QPR$ and $\angle OPR$
(c) $\angle LMN$
- (a) RQ and QP (b) Q
(c) $\angle RQP$ or $\angle PQR$

Exercise 60

- (a) one, two (b) 90° (c) right angle (d) 180°
(e) 360°
- (a) acute angle (b) right angle
(c) obtuse angle (d) actue angle
(e) actue angle
- (a) 60° ($\therefore 90^\circ - 30^\circ = 60^\circ$)
(b) 45° ($\therefore 90^\circ - 45^\circ = 45^\circ$)

- (c) 36° ($\therefore 90 - 54 = 36$)
 (d) 1° ($\therefore 90 - 89 = 1$)
 (e) 30° ($\therefore 90 - 60 = 30$)
5. (a) $180 - 35 = 145^\circ$ (b) $180 - 75 = 115^\circ$
 (c) $180 - 90 = 90^\circ$ (d) $180 - 150 = 30^\circ$
 (e) $180 - 170 = 10^\circ$
6. $45^\circ, 45^\circ$ ($90/2 = 45^\circ$)
 7. $90^\circ, 90^\circ$ ($180/2 = 90^\circ$)
 8. (b)

Exercise 61

1. (a) same (b) isosceles triangle
 (c) equilateral triangle (d) 3, 3
 (e) unequal (f) acute
2. (a) triangle, LMC (b) three LM, MC, CM
 (c) 3, $\angle L$, $\angle M$, $\angle C$
3. (a) Scalene (b) equilateral
 (c) isosceles (d) isosceles
 (e) scalene (f) equilateral
4. (a) right angled (b) right angled
 (c) obtuse angled

Exercise 62

1. (a) four (b) four (c) right (d) equal
 (e) rectangle
2. (a) ✓ (b) ✓ (c) ✗ (d) ✓
 (e) ✗
3. (a) rectangle (b) square (c) rectangle (d) square

Exercise 63

1. Perimeter of triangle = side + side + side

- (a) $25 + 35 + 40 = 100 \text{ m}$
- (b) $135 + 125 + 105 = 265 \text{ m}$
- (c) $65 + 85 + 80 = 230 \text{ m}$
- (d) $90 + 110 + 115 = 315 \text{ m}$
- (e) $60 + 90 + 100 = 250 \text{ m}$
- (f) $135 + 140 + 150 = 425 \text{ m}$

2. Perimeter of square = $4 \times \text{side}$

- (a) $4 \times 12 = 48 \text{ m}$
- (b) $4 \times 15 = 60 \text{ m}$
- (c) $18 \times 4 = 72 \text{ m}$
- (d) $4 \times 20 = 80 \text{ m}$
- (e) $25 \times 4 = 100 \text{ m}$
- (f) $4 \times 33 = 132 \text{ m}$
- (g) $4 \times 40 = 160 \text{ m}$
- (h) $4 \times 75 = 300 \text{ m}$

3. Perimeter of a rectangle is $= 2(\ell + b)$

- (a) $2 \times (55 + 35)$
 $= 2 \times 90 = 180 \text{ m}$
- (b) $2 \times (90 + 80)$
 $= 2 \times 170 = 340 \text{ m}$
- (c) $2 \times (120 + 105)$
 $= 2 \times 225 = 450 \text{ m}$
- (d) $2 \times (240 + 170)$
 $= 2 \times 410 = 820 \text{ m}$
- (e) $2 \times (360 + 225)$
 $= 2 \times 585 = 1170 \text{ m}$
- (f) $2 \times (275 + 165)$
 $= 2 \times 440 = 880 \text{ m}$

4. 1 round = Perimeter of triangular park
 $= 20 + 35 + 25 = 80 \text{ m}$

$$4 \text{ rounds} = 4 \times 80 = 320\text{m}$$

$$5. \text{ Perimeter} = \text{length of boundary wall}$$

$$= 2 \times (l + b)$$

$$= 2 \times (35 + 30)$$

$$= 2 \times 65 = 130 \text{ m}$$

$$6. \text{ Perimeter of the field}$$

$$= 30 + 40 + 40 + 50$$

$$= 160 \text{ m}$$

$$\text{Cost of fencing} = ₹15 \times 160$$

$$= ₹2400$$

$$7. \text{ Perimeter of square} = 4 \times \text{side}$$

$$= 4 \times 115 = 460\text{m}$$

$$8 \text{ times turn} = 8 \times 460 = 3680\text{m}$$

$$8. \text{ Perimeter} = 4 \times \text{side}$$

$$\text{side} = \text{perimeter} \div 4$$

$$= 240 \div 4$$

$$= 60 \text{ m}$$

$$9. \text{ Perimeter} = 2 \times (l + b)$$

$$\frac{\text{Perimeter}}{2} - l = b$$

$$\frac{140}{2} - 35 = b$$

$$70 - 35 = b$$

$$35 \text{ m} = b$$

$$\text{Breadth} = 35 \text{ m}$$

$$10. \frac{\text{Perimeter}}{2} - \text{breadth} = \text{length}$$

$$\frac{360}{2} - 40 = 180 - 40 = 140 \text{ m length}$$

Exercise 64

$$1. (a) 175\text{cm}$$

$$\text{City A} (25 \times 7 = 175)$$

(b) $3 \times 25 = 75\text{cm} = \text{City E}$ (c) $6 \times 25 = 150\text{cm} = \text{City C}$

Complete rainfall = 550 cm