PROGRESS WITH MATHS

Teachers Manual

4

BLUE SKY
BOOKS INTERNATIONAL
2647, Roshan Pura, Nai Sarak,Delhi-110006
Phone : 98994 23454, 98995 63454
E-mail : blueskybooks@gmail.com

1. Revision

1. (a) Nine thousand one hundred forty-seven.
(b) Seven thousand four hundred eight.
(c) Nine hundred ninety-nine.
(d) Eight thousand two hundred fifty.

2. (a) 8057 (b) 9685 (c) 207 (d) 7829

3. 99 **4.** 10 **5.** 999 **6.** 100 **7.** 9999 **8.** 9

9. 1 **10.** 1000 **11.** 7001

12. (a) 8899 (b) 1237 (c) 7999 (d) 899

13. (a) 4004 (b) 5325 (c) 100 (d) 400

14.

(a)	1000	1010	**1020**	1030	**1040**	1050	1060	**1070**	1080
(b)	1010	1110	1210	1310	1410	1510	1610	1710	1810
(c)	1000	2000	3000	4000	5000	6000	7000	8000	9000

15. (a) The ascending order of given numbers are 6, 96, 420, 1998, 4789
(b) The ascending order of given numbers are 8, 35, 412, 718
(c) The ascending order of given numbers are 8, 88, 888, 8088
(d) The ascending order of given numbers are 5, 20, 777, 4000, 9658

16. (a) The descending order of given numbers are 1023, 959, 345
(b) The descending order of given numbers are 2000, 999, 765, 101, 8
(c) The descending order of given numbers are 9875, 381, 44 17
(d) The descending order of given numbers are 9999, 807, 666

17. (a) 1688 (b) 5171 (c) 8320 (d) 7435

18. (a) $6450 = 6000 + 400 + 50 + 0$
(b) $4300 = 4000 + 300 + 00 + 0$
(c) $9026 = 9000 + 000 + 20 + 6$
(d) $3718 = 3000 + 700 + 10 + 8$

19. (a) 9750 (b) 7755 (c) 5432 (d) 4321 (e) 9870 (f) 9875

20. All the numbers between 3450 and 3456 are 3451, 3452, 3453, 3454, 3455

21. (a) XXXIV (b) VI (c) XXXVIII (d) XXVIII
(e) XXXIII (f) XXXIX (g) XII (h) VIII
(i) XXVI (j) XIV (k) XV (l) XX

22. (a) 20 (b) 36 (c) 13 (d) 28 (e) 29 (f) 19
(g) 18 (h) 9 (i) 26 (j) 16 (k) 17 (l) 25

2. Roman Numerals

Exercise 2

1. (a) ↔ (iv), (b)↔(iii),(c)↔(i), (d)↔(ii), (e)↔(vii), (f)↔(v), (g)↔(viii), (h)↔(vi)

2. (a) XLII, XLIII, XLIV, XLV, XLVI, XLVII
(b) XXX, XXXI, XXXII, XXXIII, XXXIV, XXXV
(c) XXV, XXVI, XXVII, XXVIII, XXIX, XXX
(d) XVII, XVIII, XIX, XX, XXI, XXII

3. (a) XVII < XIX (b) XL > XXXIII (c) XXXVIII < LX
(d) XXV < LXV (e) XLIX < LV (f) XLI > XVII

4. (a) 25 > XXIV (b) 38 < XXXIX (c) 65 > XLV
(d) 45 < LXV (e) XLVI < 56 (f) XXVI = 25 + 1
(g) XVII + XII = 20 + 9 (h) XL < 50 + 10
(i) 20 + 5 < XX + VI (j) XXXV = 10 + 25

5. (a) $78 = 50 + 20 + 8 = L + XX + VIII = LXXVIII$ **Ans.**
(b) $42 = (50 - 10) + 2 = XL + II = XLII$ **Ans.**
(c) $56 = 50 + 6 = L + VI = LVI$ **Ans.**
(d) $35 = 30 + 5 = XXX + V = XXXV$ **Ans.**
(e) $68 = 50 + 10 + 8 = L + X + VIII = LXVIII$ **Ans.**
(f) $105 = 100 + 5 = C + V = CV$ **Ans.**
(g) $210 = 100 + 100 + 10 = C + C + X = CCX$ **Ans.**
(h) $75 = 50 + 20 + 5 = L + XX + V = LXXV$ **Ans.**
(i) $109 = 100 + (10 - 1) = C + IX = CIX$ **Ans.**
(j) $84 = 50 + 30 + (5 - 1) = L + XXX + IV = LXXXIV$ **Ans.**
(k) $156 = 100 + 50 + 6 = C + L + VI = CLVI$ **Ans.**
(l) $24 = 10 + 10 + (5 - 1) = X + X + IV = XXIV$ **Ans.**

6. (a) $XLVII = XL + VII = (50-10) + 7 = 40 + 7 = 47$ **Ans.**

(b) $XXII = X + X + II = 10 + 10 + 2 = 22$ **Ans.**

(c) $XVII = X + VII = 10 + 7 = 17$ **Ans.**

(d) $XXXIX = X + X + X + IX$

$= 10 + 10 + 10 + (10-1) = 30 + 9 = 39$ **Ans.**

(e) $XLIV = XL + IV = (50-10) + 4 = 40 + 4 = 44$ **Ans.**

(f) $LXII = L + X + II = 50 + 10 + 2 = 62$ **Ans.**

(g) $LXVIII = L + X + VIII = 50 + 10 + 8 = 68$ **Ans.**

(h) $XLIX = XL + IX = (50-10) + (10-1) = 40 + 9 = 49$(i) LIX =

$L + IX = 50 + (10-1) = 50 + 9 = 59$ **Ans.**

(j) $LXXII = L + X + X + II = 50 + 10 + 10 + 2 = 72$ **Ans.**

(k) $XXVII = X + X + VII = 10 + 10 + 7 = 27$ **Ans.**

(l) $XXXVIII = X + X + X + VIII = 10 + 10 + 10 + 8 = 38$ **Ans.**

7. XVIII, XXVI, XXXII, XXXVIII, XLV, LXIII

8. LXV, LIX, XLVIII, XLV, XXXV, XXXIII, XXIV

9. (a) $XXXVIII + XVII = 38 + 17 = 55 = LV$

Hence, $XXXVIII + XVII = LV$ **Ans.**

(b) $XLVI - XXIX = 46 - 29 = 17 = XVII$ **Ans.**

(c) $LXV - XLV = 65 - 45 = 20 = XX$ **Ans.**

(d) $XXIX + XVIII = 29 + 18 = 47 = XLVII$ **Ans.**

(e) $XVI + XXV = 16 + 25 = 41 = XLI$ **Ans.**

(f) $XLII + XXVIII = 42 + 28 = 70 = LXX$ **Ans.**

10. (a) XL (b) LIX (c) XCV (d) XLIX (e) XCIX (f) XLIV
(g) LXXIII (h) XCI (i) LXIV (j) LXXXVI

3. Large Numbers

Exercise 3 A

1. (a) Forty-one thousand six hundred twenty-two.
(b) Eighteen lakh six thousand one hundred twenty.
(c) Eight crore ten lakh forty thousand ninety-five.

2. (a) Two lakh three hundred twenty-six.
(b) Sixty-seven thousand five hundred fifty.
(c) Twenty two thousand one hundred four.
(d) Sixty thousand three hundred forty.
(e) Seventy one lakh fifty four thousand two.
(f) Thirty two lakh thirty six thousand six hundred sixty.

3. (a) 7,57,061 (b) 2,00,00,000 (c) 4,72,70,008
(d) 95,99,994 (e) 25,00,552 (f) 15,31,400
(g) 63,07,911

4. (a) 6,06,12,400 (b) 64,025 (c) 3,02,008

5. (a) Fifty seven thousand six hundred fifty three.
(b) Sixty lakh ninety eight thousand ninety four.
(c) Four lakh twenty three thousand fifty six.
(d) Sixty six thousand five hundred forty one.
(e) Two lakh thirty four thousand five hundred sixty-seven.
(f) Three lakh thirty four thousand four hundred.
(g) Five lakh
(h) Five lakh ninety eight thousand seven hundred sixty five.
(i) Eighty eight lakh eighty eight thousand eight hundred eighty eight.

6. 19,393; 19,394; 19,395; 19,396; 19,397; 19,398

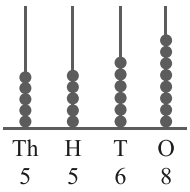
7. 2,45,098; 2,45,099; 2,45,100; 2,45,101; 2,45,102

8. 2,07,005 = Two lakh seven thousand five.
Reversing the order = 5,00,702
5,00,702 = Five lakh seven hundred two.

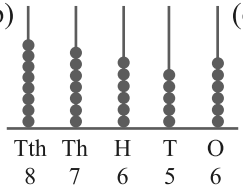
9. (a) 36 125, 37 125, 38 125, 39 125, 40 125
(b) 94 350, 95 350, 96 350, 97 350, 98 350
(c) 46 500, 46 600, 46 700, 46 800, 46 900

10. (a) 435 = Four hundred thirty five.
(b) 5456 = Five thousand four hundred fifty-six.
(c) 617235 = Six lakh seventeen thousand two hundred thirty five.

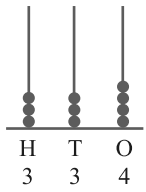
11. (a)



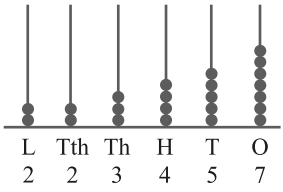
(b)



(c)



(d)



12. (a) (i) 1030000 (b) (ii) 401405 (c) (iii) 38062

13. (a) 5713 (b) 129912 (c) 462085 (d) 300084

14. (a) 1,23,008 (b) 22,30,001 (c) 27,502 (d) 44,444

15. (a) 700520 = Seven hundred thousand five hundred twnety.
(b) 3650201 = Three million six hundred fifty thousand two hundred one

(c) 12345678 = Twelve million three hundred forty five thousand six hundred seventy eight.
(d) 472105 = Four hundred seventy two thousand one hundred five.

16.

S.No.	Million			Thousands			Ones		
	Hundred million	Ten million	million	Hundred thousands	Ten thousand	Thousand	Hundreds	Tens	Ones
(a)		1	2	2	3	3	4	0	5
(b)			1	3	5	0	5	3	1
(c)				4	0	2	0	5	0

17. (a) 10 (b) 10 (c) 100

Exercise 3 B

1. (a) 0 (b) 1 (c) 500000 (d) 7000 (e) 20 (f) 800

2. (a)

Number	Place Value
3 1 6 8 7	
	7
	8 0
	6 0 0
	1 0 0 0
	3 0 0 0 0

(b)

Number	Place Value
6 2 3 8 6 5	
	5
	6 0
	8 0 0
	3 0 0 0
	2 0 0 0 0
	6 0 0 0 0 0

3. (a) $33567 = 30000 + 3000 + 500 + 60 + 7$

(b) $647906 = 600000 + 40000 + 7000 + 900 + 00 + 6$

(c) $4732192 = 4000000 + 700000 + 30000 + 2000 + 100 + 90 + 2$

4. (a) $600000 + 40000 + 0000 + 100 + 20 + 8$

(b) $30000 + 0000 + 000 + 50 + 1$ (c) $80000 + 9000 + 100 + 10 + 4$

(d) $2000000 + 200000 + 20000 + 1000 + 200 + 20 + 5$

5. (a) 78145 = 7 ten thousands + 8 thousands + 1 hundred + 4 tens + 5 ones.

(b) $89065 = 80000 + 9000 + 0 + 60 + 5$.

(c) 69803 = 6 ten thousands + 9 thousands + 8 hundreds + 0 ten + 3 ones.

(d) 312067 = 3 lakhs + 1 ten thousand + 2 thousand + 0 hundred + 6 tens + 7 ones.

(e) $(3 \times 10000) + (5 \times 1000) + (4 \times 100) + (2 \times 10) + (9 \times 1) = 35429$

6. (a) Place value of 0 = 0 (b) Place value of 2 = 200000

7. 1000 hundred make a lakh.

8. 100 tens make a thousand.

9. (a) 3 thousands + 9 thousands = 1 ten thousand 2 thousands.

(b) 6 thousands + 2 thousnads = 8 thousands.

(c) 65 thousands + 35 thousands = 1 lakh.

(d) 7 ten thousands + 8 ten thousands = 1 lakh 5 ten thousands

(e) 6 ten thousands + 2 ten thousands = 8 ten thousands.

(f) 6 ten thousands + 5 ten thousands = 1 lakh 1 ten thousand.

4. Addition of Numbers

Exercise 4 A

1. (a)

Tth	Th	H	T	O
4	4	1	2	1
+ 4	5	2	0	0
8	9	3	2	1

(b)

Tth	Th	H	T	O
2	3	4	5	8
+ 5	1	2	4	1
7	4	6	9	9

(c)

Tth	Th	H	T	O
7	2	5	0	3
+	4	0	9	2
7	6	5	9	5

(d)

Tth	Th	H	T	O
4	0	0	6	4
+ 4	8	7	1	3
8	8	7	7	7

(e)

Tth	Th	H	T	O
8	7	6	5	4
	+	3	2	2
8	7	9	7	6

(f)

Tth	Th	H	T	O
9	0	7	0	4
+	3	2	0	1
9	3	9	0	5

2. (a)

	L	Tth	Th	H	T	O
	3	2	4	5	6	7
+	2	1	3	4	2	1
	5	3	7	9	8	8

(b)

	L	Tth	Th	H	T	O
	3	4	1	1	2	5
+	3	2	4	5	6	2
	6	6	5	6	8	7

(c)

	L	Tth	Th	H	T	O
	4	1	5	3	0	6
+	3	7	2	0	0	2
	7	8	7	3	0	8

(d)

	L	Tth	Th	H	T	O
		5	3	7	2	4
+	8	1	2	0	5	5
	8	6	5	7	7	9

3. (a)

	4	3	2	6	4
+	2	2	5	2	1
+	2	4	0	1	2
	8	9	7	9	7

(b)

	6	3	1	4	3
+		2	5	2	3
+		1	1	3	3
	6	6	7	9	9

(c)

	2	3	4	5	6	5
+		4	2	0	1	2
+			3	2	2	0
	2	7	9	7	9	7

(d)

			2	4	
+		2	4	1	
+	2	3	1	0	
+	2	4	3	0	4
	2	6	8	7	9

(e)

	1	2	3	4	5	6
+	1	2	3	3	2	
+		1	2	1	0	
+		2	0	0	0	
	1	3	8	9	9	8

(f)

					5
+				5	0
+			5	1	0
+	8	7	1	0	4
	8	7	6	6	9

4. (a)

	Tth	Th	H	T	O
	4	1	2	1	2
+	3	2	1	2	3
+		5	4	5	4
	7	8	7	8	9

(b)

	Tth	Th	H	T	O
	5	1	3	2	1
+	4	3	2	6	7
	9	4	5	8	8

(c)

	L	Tth	Th	H	T	O
	6	4	4	5	3	1
+	2	4	3	2	4	5
	8	8	7	7	7	6

(d)

	Tth	Th	H	T	O
	1	1	2	1	1
		2	1	2	2
	3	3	1	3	3
+			5	2	3
	4	6	9	8	9

(e)

	Tth	Th	H	T	O
	1	1	3	2	2
	3	4	3	4	4
	3	1	2	1	1
+	2	0	0	0	1
	9	6	8	7	8

(f)

		Tth	Th	H	T	O
		5	0	5	0	5
			5	0	0	1
+	5	0	1	0	2	
1	0	5	6	0	8	

5. (a)

	Tth	Th	H	T	O
	1	6	9	7	6
+	6	4	8	0	6
	8	1	7	8	2

(b)

	Tth	Th	H	T	O
	6	2	4	0	5
+	2	4	6	5	9
	8	7	0	6	4

(c)

	Tth	Th	H	T	O
	5	2	8	7	4
+	5	8	6	9	5
1	1	1	5	6	9

(d)

	Tth	Th	H	T	O
	7	4	2	5	2
+	3	9	6	8	
	7	8	2	2	0

(e)

	Tth	Th	H	T	O
		4	8	7	1
+	9	2	6	6	9
	9	7	5	4	0

(f)

	Tth	Th	H	T	O
			9	3	8
+	5	2	1	8	7
	5	3	1	2	5

6. (a)

	L	Tth	Th	H	T	O
	2	6	5	8	4	9
+	3	7	3	2	4	9
	6	3	9	0	9	8

(b)

	L	Tth	Th	H	T	O
	3	4	2	5	6	7
+	2	7	8	9	5	6
	6	2	1	5	2	3

(c)

	L	Tth	Th	H	T	O
		4	3	8	5	8
+	8	4	9	7	6	2
	8	9	3	6	2	0

(d)

	L	Tth	Th	H	T	O
	5	2	7	4	9	6
+	2	3	6	5	4	0
	7	6	4	0	3	6

7. (a)

	2 3 6 7 8	
+	1 4 9 7 2	
+	5 5 0 3 5	
	9 3 6 8 5	

(b)

	4 6 8 0 2 4	
+	1 3 5 7 9 1	
+	5 6 7 8 9	
	6 6 0 6 0 4	

(c)

	1 2 3 4 5	
+	5 4 3 2 5	
+	4 4 5 6 7 8	
	5 1 2 3 4 8	

(d)

	5 6 7 8 4	
+	7 6 5 4	
+	4 5 4	
	6 4 8 9 2	

(e)

	4 5 6 7	
+	3 4 5 6 7	
+	2 3 4 5 6 7	
	2 7 3 7 0 1	

(f)

	2 4 6 8 0	
+	6 7 8 9 0 0	
+	2 1 3 1 4 0	
	9 1 6 7 2 0	

8. (a)

	6 6 5 5 7	
+	4 4 4 7	
+	3 3 7	
+	2 7	
	7 1 3 6 8	

(b)

	5 6 7 8 9 7	
+	4 3 2 1 1	
+	1 8 9 4 5 8	
+	2 1 4	
	8 0 0 7 8 0	

(c)

	1 3 5 7 9	
+	2 4 6 8 0	
+	5 0 3 2 1	
+	1 1 8 9 3	
	1 0 0 4 7 3	

9. (a)
$$\begin{array}{r} 12129 \\ +24456 \\ +96543 \\ \hline 133128 \end{array}$$

(b)
$$\begin{array}{r} 34436 \\ +5061 \\ +\ 343 \\ +\ \ 2 \\ \hline 39842 \end{array}$$

(c)
$$\begin{array}{r} 710109 \\ +94087 \\ +\ 4354 \\ +76789 \\ +\ \ 235 \\ \hline 885574 \end{array}$$

10. (a)
$$\begin{array}{r} 21122 \\ +\ 4571 \\ +\ \ 302 \\ +\ \ \ 3 \\ \hline 25998 \end{array}$$

(b)
$$\begin{array}{r} 55123 \\ +40612 \\ +\ 1721 \\ +\ \ 43 \\ \hline 97499 \end{array}$$

(c)
$$\begin{array}{r} 36312 \\ +43425 \\ +11232 \\ \hline 90969 \end{array}$$

11. (a)
$$\begin{array}{r} 5432 \\ +3169 \\ \hline 8601 \end{array}$$

Hence, 8601 = Eight thousand six hundred one. **Ans.**

(b)
$$\begin{array}{r} 20000 \\ 63000 \\ +10000 \\ \hline 93000 \end{array}$$

Hence, 93000 = Ninety-three thousand. **Ans.**

(c)
$$\begin{array}{r} 106000 \\ 245000 \\ +300900 \\ \hline 651900 \end{array}$$

Hence, 651900 = Six lakh fifty one thousand nine hundred. **Ans.**

(d)
$$\begin{array}{r} 30013 \\ +\ 8978 \\ \hline 38991 \end{array}$$

Hence, 38991 = Thirty-eight thousand nine hundred ninety one. **Ans.**

(e)
$$\begin{array}{r} 203001 \\ 14070 \\ +\ \ 5055 \\ \hline 222126 \end{array}$$

Hence, 222126 = Two lakh twenty-two thousand one hundred twenty six. **Ans.**

12. (a) 100200 (b) 0
(c) 678567 (d) 123456
(e) 0 (f) 878787

Exercise 4 B

1. The number which is 748 more than 66443 = 66443 + 748 = 67191

$$\begin{array}{r} 66443 \\ +\ \ 748 \\ \hline 67191 \end{array}$$

Hence, the required number = 67191 **Ans.**

2. The number which is 172569 exceeds by 1526 = 172569 + 1562

$$\begin{array}{r} 172569 \\ +\ 1562 \\ \hline 174131 \end{array}$$

Hence, the required number = 174131 **Ans.**

3. The number from which 1234 must be subtracted to get 12345 = 1234 + 12345 = 13579

$$\begin{array}{r} 12345 \\ +\ 1234 \\ \hline 13579 \end{array}$$

Hence, the required number = 13579 **Ans.**

4. Smallest six-digit number = 100000
Largest three-digit number = 999
Sum =

$$\begin{array}{r} 100000 \\ +\ \ \ 999 \\ \hline 100999 \end{array}$$

Hence, the required sum is 100999. **Ans.**

5. Largest four-digit number = 9999
Smallest three-digit number = 100
Sum =

$$\begin{array}{r} 9999 \\ +\ 100 \\ \hline 10099 \end{array}$$

Hence, the required sum = 10099 **Ans.**

6. Cost of plot = ₹ 563498
Cost of constructed building = ₹ 876097
Total cost =

$$\begin{array}{r} ₹\ 563498 \\ +₹\ 876097 \\ \hline ₹\ 1439595 \end{array}$$

Hence, the total cost = ₹ 1439595 **Ans.**

7. Number of boys = 485178
Number of girls = 196997
Total students =

$$\begin{array}{r} 485178 \\ +\ 196997 \\ \hline 682175 \end{array}$$

Hence, 682175 students in all took the examination **Ans.**

8. Spectators in first row = 16434
Spectators in second row = 18683
Spectators in third row = 22758
Total number of spectators =

$$\begin{array}{r} 16434 \\ 18683 \\ +\ 22758 \\ \hline 57875 \end{array}$$

Hence, total number of spectators = 57875 **Ans.**

9. Men = 345678 Women = 121345
Children = 98765
People were present at the meeting =

$$\begin{array}{r} 345678 \\ 121345 \\ +\ 98765 \\ \hline 565788 \end{array}$$

Hence, 565788 people were present at the meeting. **Ans.**

10. Deposit amount = ₹ 674589
A month later deposit amount = ₹ 876195
Total amount =

₹ 6 7 4 5 8 9
+ ₹ 8 7 6 1 9 5
₹ 1 5 5 0 7 8 4

Hence, ₹ 1550784 he deposited in the bank. **Ans.**

11. Cost of black and white TV = ₹ 3369
Cost of colour TV = ₹ 11789 more than ₹ 3369
Then, cost of colour TV =

₹ 1 1 7 8 9
+ ₹ 3 3 6 9
₹ 1 5 1 5 8

Hence, cost of colour TV is ₹ 15158 **Ans.**

12. Weight of ordinary rice = 215306 kg
Weight of basmati rice = 173457 kg
Weight of wheat rice = 462938 kg
Total weight =

2 1 5 3 0 6 Kg
1 7 3 4 5 7 Kg
+ 4 6 2 9 3 8 Kg
8 5 1 7 0 1 Kg

Hence, 851701 kg is the total weight of grains in the granary. **Ans.**

13. Produced wheat in the year 2010 = 2340565 kg
Production increased every year = 71050 kg
Increasement in production in three years

= 7 1 0 5 0 kg
7 1 0 5 0 kg
+ 7 1 0 5 0 kg
2 1 3 1 5 0 kg

Production of wheat in year 2013

= 2 3 4 0 5 6 5 kg
2 1 3 1 5 0 kg
2 5 5 3 7 1 5 kg

14. Rich man left money for his wife = ₹ 789615
Rich man left money for first son = ₹ 123456
Total money =

₹ 7 8 9 6 1 5
+ ₹ 1 2 3 4 5 6
₹ 9 1 3 0 7 1

Money for second son =

₹ 1 2 3 4 5 6
+ ₹ 7 8 9 6 5
₹ 2 0 2 4 2 1

Total money =

₹ 9 1 3 0 7 1
+ ₹ 2 0 2 4 2 1
₹ 1 1 1 5 4 9 2

Hence, ₹ 1115492 men leave behind. **Ans.**

15. Number of soldiers in one regiment =

4 5 6 7
+ 1 7 8
4 7 4 5

Total number of soldiers in second regiment =

2 3 7 6
+ 2 9 1
2 6 6 7

Total number of soldiers in third regiment =

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

Total number of soldires in the three regiments now =

$$\begin{array}{r} 4\,7\,4\,5 \\ 2\,6\,6\,7 \\ +\,5\,2\,2\,3 \\ \hline 1\,2\,6\,3\,5 \end{array}$$

Hence, 12635 is the total number of soldires in the three regiments now.

16. Total population =

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

Hence, total population =2897178 **Ans.**

17. Cost of a car = ₹ 205789

Cost of a motor-cycle = ₹ 42785

Cost of a scooter = ₹ 26875

Cost of a bicycle = ₹ 1432

Total cost =

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

Hence, ₹ 276881 spent by him. **Ans.**

5. Subtraction of Numbers

Exercise 5 A

1. (a)

Th	H	T	O
5	7	8	8
− 4	5	0	6
1	2	8	2

(b)

Tth	Th	H	T	O
8	9	8	8	5
− 5	5	4	4	3
3	4	4	4	2

(c)

Tth	Th	H	T	O
7	6	5	4	4
− 5	2	3	1	0
2	4	2	3	4

(d)

Tth	Th	H	T	O
5	4	3	6	2
− 2	2	3	4	5
3	2	0	1	7

(e)

Tth	Th	H	T	O
9	1	5	2	8
− 6	1	3	1	6
3	0	2	1	2

(f)

Tth	Th	H	T	O
9	5	4	6	9
−	3	1	2	5
9	2	3	4	4

2. (a)

L	Tth	Th	H	T	O
9	7	8	9	5	4
− 5	1	5	4	3	3
4	6	3	5	2	1

(b)

L	Tth	Th	H	T	O
5	5	4	4	3	3
− 2	2	1	1	0	3
3	3	3	3	3	0

(c)

L	Tth	Th	H	T	O
7	8	9	9	9	6
− 2	1	2	2	9	2
5	7	7	7	0	4

(d)

L	Tth	Th	H	T	O
6	5	4	3	2	1
− 3	2	1	2	1	1
3	3	3	1	1	0

(e)

L	Tth	Th	H	T	O
8	7	6	6	5	7
− 6	4	3	3	2	4
2	3	3	3	3	3

(f)

L	Tth	Th	H	T	O
6	4	3	1	0	4
−	4	1	0	0	4
6	0	2	1	0	0

3. (a)
$$\begin{array}{r} 123456 \\ -\,112233 \\ \hline 11223 \end{array}$$

(b)
$$\begin{array}{r} 45554 \\ -\,32103 \\ \hline 13451 \end{array}$$

(c)
$$\begin{array}{r} 39876 \\ -\,18540 \\ \hline 21336 \end{array}$$

(d)
$$\begin{array}{r} 799967 \\ -\,543217 \\ \hline 256750 \end{array}$$

4. Difference =
$$\begin{array}{r} 78954 \\ -\,11223 \\ \hline 67731 \end{array}$$

Hence, the difference = 67731 **Ans.**

5. Difference =
$$\begin{array}{r} 468967 \\ -\,222244 \\ \hline 246723 \end{array}$$

Hence, the difference = 246723 **Ans.**

6. (a)

Tth	Th	H	T	O
5	5	6	7	8
− 3	5	2	2	1
2	0	4	5	7

(b)

L	Tth	Th	H	T	O
7	6	5	5	4	5
− 3	3	1	4	2	2
4	3	4	1	2	3

(c)

L	Tth	Th	H	T	O
2	3	4	5	6	7
−	2	1	1	1	4
2	1	3	4	5	3

7. (a)

Tth	Th	H	T	O
7	8	9	7	7
− 2	9	9	8	9
4	8	9	8	8

(b)

Tth	Th	H	T	O
7	4	5	6	5
−	2	0	8	7
7	2	4	7	8

(c)

Tth	Th	H	T	O
1	0	0	0	0
−	2	3	4	9
	7	6	5	1

(d)

Tth	Th	H	T	O
8	7	6	5	3
− 2	8	7	9	5
5	8	8	5	8

(e)

Tth	Th	H	T	O
6	5	4	4	2
− 2	6	7	4	3
3	8	6	9	9

(f)

Tth	Th	H	T	O
6	7	8	9	4
− 5	8	9	9	5
	8	8	9	9

8. (a)

L	Tth	Th	H	T	O
3	3	0	0	6	5
− 1	4	8	9	7	7
1	8	1	0	8	8

(b)

L	Tth	Th	H	T	O
1	0	0	0	0	0
−	1	2	3	4	2
	8	7	6	5	8

(c)

L	Tth	Th	H	T	O
8	2	6	6	5	4
−			7	8	9
8	2	5	8	6	5

(d)

L	Tth	Th	H	T	O
5	4	5	4	5	4
− 1	6	7	8	9	8
3	7	7	5	5	6

(e)

L	Tth	Th	H	T	O
6	6	6	5	5	6
− 1	7	7	8	9	7
4	8	8	6	5	9

(f)

L	Tth	Th	H	T	O
5	0	7	0	5	4
− 1	2	9	7	6	0
3	7	7	2	9	4

9. (a)

9	5	8	8	2	2
−	9	9	3	3	2
8	5	9	4	9	0

(b)

6	5	4	3	2	1
−	6	6	7	7	8
5	8	7	5	4	3

(c)

7	4	3	2	1
−	3	5	6	4	8
	3	8	6	7	3

(d)

9	7	6	5	4
−	3	8	8	9	9
	5	8	7	5	5

10.

9	4	3	2	0
−	7	6	7	6	5
	1	7	5	5	5

11.

8	5	3	4	2	0
−	4	6	4	6	4	6
	3	8	8	7	7	4

12.

8	8	8	5	5	5
−	3	9	9	6	7	8
	4	8	8	8	7	7

13. (a)

7	6	4	2	9
−	4	2	8	1	9
	3	3	6	1	0

(b)

9	1	6	3	4
−	3	8	9	2	3
	5	2	7	1	1

(c)

1	0	0	0	8	4
−	8	0	0	2	2
	2	0	0	6	2

14. 38609
−25304
13305

Hence, 13305 = Thirteen thousand three hundred five. **Ans.**

Exercise 5 B

1. The number to be added = 73,956 − 16,789

73956
−16789
57167

Hence, 57,167 should be added. **Ans.**

2. Difference = 6,04,378 − 5,67,999

604378
−567999
36379

Hence, 36379 is greater than 567999. **Ans.**

3. Sum of two number = 9,87,654
One of the number = 99,765
Other number = 987654
−99765
887889

Hence, the other number is 887889. **Ans.**

4. The number to be subtracted = 4,56,782 − 3,78,993 = 77,789

456782
−378993
77789

Hence, 77789 must be subtracted. **Ans.**

5. People live in Vishal Nagar = 6,86,217
People live in Chotapur = 4,03,612
Difference = 686217
−403612
282605

Hence, 282605 more people live in Vishal Nagar. **Ans.**

6. Produced electric bulbs in one year = 57,689
Produced electric bulbs in next year = 66,798
Difference = 66798
−57689
9109

Hence, 9109 bulbs the factory's production increase in next year. **Ans.**

7. Sold eggs in 2013 = 35,287
Sold eggs in 2014 = 3,156 less than 35,287
Then, Difference =
35287
−3156
32131

Hence, 32131 eggs were sold in 2014. **Ans.**

8. Cost of flat = ₹ 4,51,300
Mr. Murly has rupees = ₹ 4,07,895
Needed money =
₹ 451300
−₹ 407895
₹ 43405

Hence, ₹ 43,405 more he needs to buy a flat. **Ans.**

9. Cost of machine = ₹ 4,23,000

Man needs money = ₹ 1,56,000 more than ₹ 4,23,000

He have money = ₹ 4 2 3 0 0 0

− ₹ 1 5 6 0 0 0

₹ 2 6 7 0 0 0

Hence, ₹ 2,67,000 money he has. **Ans.**

10. Number of trees = 2,07,895

Number of teak trees = 83,649

Number of other trees = 2 0 7 8 9 5

− 8 3 6 4 9

1 2 4 2 4 6

Hence, number of other trees are in a forest is 1,24,246. **Ans.**

Exercise 5 C

1. (a) $6+3-5=9-5=4$ **Ans.**

(b) $7-2+3=7+3-2=10-2=8$ **Ans.**

(c) $75+68-55=143-55=88$ **Ans.**

(d) $14+11-12=25-12=13$ **Ans.**

(e) $189-95+125=189+125-95=314-95=219$ **Ans.**

(f) $428+318-287=746-287=459$ **Ans.**

(g) $165-55+40=165+40-55=205-55=150$ **Ans.**

(h) $233-125-18=108-18=90$ **Ans.**

(i) $1250+280-1235=1530-1235=295$ **Ans.**

(j) $1250+495-321-157=1745-321-157=1424-157=1267$ **Ans.**

(k) $298+596-293-392=894-293-392=601-392=209$ **Ans.**

(l) $1089-197-47+1256=1089+1256-197-47$

$=2345-197-47=2148-47=2101$ **Ans.**

Exercise 5 D

1. Monthly salary from a private firm = ₹ 8460

Monthly Part-time salary from a printing press = ₹ 1345

Total income = ₹ 8 4 6 0

+ ₹ 1 3 4 5

₹ 9 8 0 5

His monthly expenditure = ₹ 5230

He save money every month =

₹ 9805
−₹ 5230
₹ 4575

Hence, ₹ 4575 he save every month. **Ans.**

2. Shop A has packets of tea =1200
Shop B has packets of tea =180 less than 1200
∴ Shop B has packets of tea
= 1200
−180
1020

Shop C has packets of tea =325 more than 1200
∴Shop C has packets of tea
= 1200
+325
1525

Total packets of tea =
1200
1020
+1525
3745

Hence, 3745 packets of tea these shops have. **Ans.**

3. Sum =
Difference =
8263
+9152
17415

9152
−8263
889

Difference of these values
= 17415
− 889
16526

Hence, 16526 is the sum of 8263 and 9152 greater than their difference. **Ans.**

4. Mr. B. bought house
= ₹ 425000
Mr. B spent rupees
= ₹ 80580
Total costs of house =
₹ 425000
+₹ 80580
₹ 505580

Mr. B Sold the house for rupees = ₹ 750000
Difference =
₹ 750000
−₹ 505580
₹ 244420

Hence, ₹ 244420 he got than he had spent. **Ans.**

5. The number must be added
= 19250
−11905
7345

Hence, 7345 must be added. **Ans.**

6. Mrs. C earns = ₹ 34248
Mr. B earns = ₹ 24526 more than Mrs. C
∴Mr. B earns =
₹ 24526
+₹ 34248
₹ 58774

Mr. A earns = ₹ 10222 less than ₹ 34248

∴Mr. A earns =

$$\begin{array}{r} ₹\ 34248 \\ -₹\ 10222 \\ \hline ₹\ 24026 \end{array}$$

Total earning =

$$\begin{array}{r} ₹\ \ 34248 \\ ₹\ \ 58774 \\ +₹\ \ 24026 \\ \hline ₹\ 117048 \end{array}$$

Hence, ₹ 117048 they earns altogether in a year. **Ans.**

7. Sum of the numbers = 10580

greater between two numbers = 6480

Difference =

$$\begin{array}{r} 10580 \\ -6480 \\ \hline 4100 \end{array}$$

Hence, their difference = 6480 − 4100 = 2380 **Ans.**

8. Sum of the numbers =

$$\begin{array}{r} 61235 \\ +18790 \\ \hline 80025 \end{array}$$

Difference of the numbers =

$$\begin{array}{r} 61235 \\ -18790 \\ \hline 42445 \end{array}$$

The number must be subtracted =

$$\begin{array}{r} 80025 \\ -42445 \\ \hline 37580 \end{array}$$

Hence, 37580 must be subtracted. **Ans.**

6 Multiplication of Numbers

Exercise 6 A

1. (a) $96875 \times 1 = 96875$ (b) $5613 \times 3947 = 3947 \times 5613$

(c) $(25 \times 42) \times 78 = 25 \times (42 \times 78)$ (d) $3578298 \times 0 = 0$

(e) $0 \times 985627 = 0$ (f) $497256 \times 1 = 497256$

(g) $275 \times (125 + 852) = 275 \times 125 + 275 \times 852$

(h) $2485 \times 6154 \times 793 = 6154 \times 2485 \times 793$

2. (a) 4900 (b) 124600 (c) 1056400

(d) 4327000 (e) 971200 (f) 22600

(g) 694200 (h) 3125000 (i) 57232000

(j) 11472000 (k) 3052000 (l) 4740000

3. (a) $4 \times 6817 \times 25 = 6817 \times (25 \times 4) = 6817 \times 100 = 681700$ **Ans.**

(b) $2 \times 5469 \times 50 = 5469 \times (50 \times 2) = 5469 \times 100 = 546900$ **Ans.**

(c) $25 \times 295 \times 20 = 295 \times (25 \times 20) = 295 \times 500 = 147500$ **Ans.**

(d) $50 \times 873 \times 2 = 873 \times (50 \times 2) = 873 \times 100 = 87300$ **Ans.**

(e) $8 \times 276 \times 25 = 276 \times (25 \times 8) = 276 \times 200 = 55200$ **Ans.**

(f) $2 \times 684 \times 50 = 684 \times (50 \times 2) = 684 \times 100 = 68400$ **Ans.**
(g) $2 \times 485 \times 5 = 485 \times (5 \times 2) = 485 \times 10 = 4850$ **Ans.**
(h) $5 \times 473 \times 4 = 473 \times (5 \times 4) = 473 \times 20 = 9460$ **Ans.**
(i) $20 \times 7168 \times 5 = 7168 \times (5 \times 20) = 7168 \times 100 = 716800$ **Ans.**
(j) $25 \times 219 \times 20 = 219 \times (25 \times 20) = 219 \times 500 = 109500$ **Ans.**
(k) $50 \times 875 \times 8 = 875 \times (8 \times 50) = 875 \times 400 = 350000$ **Ans.**
(l) $6 \times 234 \times 5 = 234 \times (5 \times 6) = 234 \times 30 = 7020$ **Ans.**

4. (a) $127 \times 1000 = 127000$ (b) $650 \times 100 = 65000$
(c) $286 \times 2000 = 572000$ (d) $175 \times 6000 = 1050000$
(e) $684 \times 8000 = 684 \times 8 \times 1000 = 5472000$
(f) $258 \times 50 = 258 \times 5 \times 10 = 12900$
(g) $611 \times 200 = 611 \times 2 \times 100 = 122200$
(h) $982 \times 400 = 982 \times 4 \times 100 = 392800$
(i) $536 \times 600 = 536 \times 6 \times 100 = 321600$
(j) $475 \times 5000 = 475 \times 5 \times 1000 = 2375000$
(k) $750 \times 3000 = 750 \times 3 \times 1 \times 1000$
(l) $289 \times 4000 = 289 \times 4 \times 1000 = 1156000$

5. (a) $88 \times 1000 = 88000$ (b) $95 \times 1000 = 95000$
(c) $186 \times 1000 = 186000$ (d) $76 \times 1000 = 76000$
(e) $758 \times 1000 = 758000$ (f) $954 \times 1000 = 954000$
(g) $156 \times 1000 = 156000$ (h) $48 \times 1000 = 48000$
(i) $389 \times 1000 = 389000$ (j) $44 \times 1000 = 44000$
(k) $275 \times 1000 = 275000$ (l) $24 \times 1000 = 24000$

Exercise 6 B

1. (a)
$$\begin{array}{r} 2301 \\ \times\ 13 \\ \hline 6903 \\ 23010 \\ \hline 29913 \end{array}$$

(b)
$$\begin{array}{r} 1032 \\ \times\ 22 \\ \hline 2064 \\ 20640 \\ \hline 22704 \end{array}$$

(c)
$$\begin{array}{r} 2123 \\ \times\ 32 \\ \hline 4246 \\ 63690 \\ \hline 67936 \end{array}$$

(d)
$$\begin{array}{r} 3212 \\ \times\ 23 \\ \hline 9636 \\ 64240 \\ \hline 73876 \end{array}$$

(e)
$$\begin{array}{r} 1232 \\ \times\ 12 \\ \hline 2464 \\ 12320 \\ \hline 14784 \end{array}$$

(f)
$$\begin{array}{r} 1123 \\ \times\ 11 \\ \hline 1123 \\ 11230 \\ \hline 12353 \end{array}$$

(g) 2322 × 21 = 2322 + 46440 = 48762

(h) 2032 × 32 = 4064 + 60960 = 65024

(i) 3124 × 12 = 6248 + 31240 = 37488

(j) 2231 × 31 = 2231 + 66930 = 69161

(k) 4223 × 23 = 12669 + 84460 = 97129

(l) 3213 × 33 = 9639 + 96390 = 106029

(m) 4232 × 22 = 8464 + 84640 = 93104

(n) 3023 × 21 = 3023 + 60460 = 63483

(o) 1043 × 12 = 2086 + 10430 = 12516

2. (a) 321 × 23 = 963 + 6420 = 7383

(b) 432 × 231 = 432 + 12960 + 86400 = 99792

(c) 141 × 112 = 282 + 1410 + 14100 = 15792

(d) 123 × 212 = 246 + 1230 + 24600 = 26076

(e) 132 × 231 = 132 + 3960 + 26400 = 30492

(f) 1233 × 123 = 3699 + 24660 + 123300 = 151659

(g) 3321 × 332 = 6642 + 99630 + 996300 = 1102572

(h) 1132 × 132 = 2264 + 33960 + 113200 = 149424

(i) 1140 × 222 = 2280 + 22800 + 228000 = 253080

(j)
$$\begin{array}{r} 1223 \\ \times\ 203 \\ \hline 3669 \\ 00000 \\ 244600 \\ \hline 248269 \end{array}$$

(k)
$$\begin{array}{r} 3123 \\ \times\ 321 \\ \hline 3123 \\ 62460 \\ 936900 \\ \hline 1002483 \end{array}$$

(l)
$$\begin{array}{r} 1233 \\ \times\ 322 \\ \hline 2466 \\ 24660 \\ 369900 \\ \hline 397026 \end{array}$$

(m)
$$\begin{array}{r} 2323 \\ \times\ 323 \\ \hline 6969 \\ 46460 \\ 696900 \\ \hline 750329 \end{array}$$

(n)
$$\begin{array}{r} 3223 \\ \times\ 223 \\ \hline 9669 \\ 64460 \\ 644600 \\ \hline 718729 \end{array}$$

(o)
$$\begin{array}{r} 2233 \\ \times\ 233 \\ \hline 6699 \\ 66990 \\ 446600 \\ \hline 520289 \end{array}$$

3. (a)
$$\begin{array}{r} 311 \\ \times 23 \\ \hline 933 \\ 6220 \\ \hline 7153 \end{array}$$

(b)
$$\begin{array}{r} 422 \\ \times 11 \\ \hline 422 \\ 4220 \\ \hline 4642 \end{array}$$

(c)
$$\begin{array}{r} 432 \\ \times 22 \\ \hline 864 \\ 8640 \\ \hline 9504 \end{array}$$

(d)
$$\begin{array}{r} 213 \\ \times 13 \\ \hline 639 \\ 2130 \\ \hline 2769 \end{array}$$

(e)
$$\begin{array}{r} 312 \\ \times 12 \\ \hline 624 \\ 3120 \\ \hline 3744 \end{array}$$

(f)
$$\begin{array}{r} 414 \\ \times 12 \\ \hline 828 \\ 4140 \\ \hline 4968 \end{array}$$

(g)
$$\begin{array}{r} 232 \\ \times\ 122 \\ \hline 464 \\ 4640 \\ 23200 \\ \hline 28304 \end{array}$$

(h)
$$\begin{array}{r} 312 \\ \times\ 123 \\ \hline 936 \\ 6240 \\ 31200 \\ \hline 38376 \end{array}$$

(i)
$$\begin{array}{r} 112 \\ \times\ 321 \\ \hline 112 \\ 2240 \\ 33600 \\ \hline 35952 \end{array}$$

(j)
$$\begin{array}{r} 1022 \\ \times\ 232 \\ \hline 2044 \\ 30660 \\ 204400 \\ \hline 237104 \end{array}$$

(k)
$$\begin{array}{r} 1234 \\ \times\ 232 \\ \hline 2468 \\ 37020 \\ 246800 \\ \hline 286288 \end{array}$$

(l)
$$\begin{array}{r} 3230 \\ \times\ 231 \\ \hline 3230 \\ 96900 \\ 646000 \\ \hline 746130 \end{array}$$

(m)
$$\begin{array}{r} 441 \\ \times\ 121 \\ \hline 441 \\ 8820 \\ 44100 \\ \hline 53361 \end{array}$$

(n)
$$\begin{array}{r} 332 \\ \times\ 222 \\ \hline 664 \\ 6640 \\ 66400 \\ \hline 73704 \end{array}$$

(o)
$$\begin{array}{r} 433 \\ \times\ 122 \\ \hline 866 \\ 8660 \\ 43300 \\ \hline 52826 \end{array}$$

4. (a)
$$\begin{array}{r} 1234 \\ \times\ 121 \\ \hline 1234 \\ 24680 \\ 123400 \\ \hline 149314 \end{array}$$

(b)
$$\begin{array}{r} 2311 \\ \times\ 123 \\ \hline 6933 \\ 46220 \\ 231100 \\ \hline 284253 \end{array}$$

(c)
$$\begin{array}{r} 3210 \\ \times\ 221 \\ \hline 3210 \\ 64200 \\ 642000 \\ \hline 709410 \end{array}$$

(d)
$$\begin{array}{r} 4232 \\ \times\ 212 \\ \hline 8464 \\ 42320 \\ 846400 \\ \hline 897184 \end{array}$$

(e)
$$\begin{array}{r} 1233 \\ \times\ 332 \\ \hline 2466 \\ 36990 \\ 369900 \\ \hline 409356 \end{array}$$

(f)
$$\begin{array}{r} 2132 \\ \times\ 123 \\ \hline 6396 \\ 42640 \\ 213200 \\ \hline 262236 \end{array}$$

(g)
$$\begin{array}{r} 4123 \\ \times\ 223 \\ \hline 12369 \\ 82460 \\ 824600 \\ \hline 919429 \end{array}$$

(h)
$$\begin{array}{r} 1223 \\ \times\ 203 \\ \hline 3669 \\ 00000 \\ 244600 \\ \hline 248269 \end{array}$$

(i)
$$\begin{array}{r} 3123 \\ \times\ 231 \\ \hline 3123 \\ 93690 \\ 624600 \\ \hline 721413 \end{array}$$

5.
$$\begin{array}{r} 313 \\ \times\ 223 \\ \hline 939 \\ 6260 \\ 62600 \\ \hline 69799 \end{array}$$

Hence, 69799 = Sixty-nine thousand seven hundred ninety nine.

Ans.

6.
$$\begin{array}{r} 232 \\ \times\ 213 \\ \hline 696 \\ 2320 \\ 46400 \\ \hline 49416 \end{array}$$

Hence, 49416 = Forty-nine thousand four hundred sixteen. **Ans.**

7.

$$\begin{array}{r} 111 \\ \times\ 500 \\ \hline 000 \\ 0000 \\ 55500 \\ \hline 55500 \end{array}$$

Hence, 55500 = Fifty-five thousand five hundred. **Ans.**

Exercise 6 C

1. (a)

$$\begin{array}{r} 343 \\ \times\ 45 \\ \hline 1715 \\ 13720 \\ \hline 15435 \end{array}$$

(b)

$$\begin{array}{r} 47 \\ \times\ 426 \\ \hline 282 \\ 940 \\ 18800 \\ \hline 20022 \end{array}$$

(c)

$$\begin{array}{r} 546 \\ \times\ 63 \\ \hline 1638 \\ 32760 \\ \hline 34398 \end{array}$$

(d)

$$\begin{array}{r} 734 \\ \times\ 43 \\ \hline 2202 \\ 29360 \\ \hline 31562 \end{array}$$

(e)

$$\begin{array}{r} 624 \\ \times\ 34 \\ \hline 2496 \\ 18720 \\ \hline 21216 \end{array}$$

(f)

$$\begin{array}{r} 872 \\ \times\ 654 \\ \hline 3488 \\ 43600 \\ 523200 \\ \hline 570288 \end{array}$$

(g)

$$\begin{array}{r} 266 \\ \times\ 236 \\ \hline 1596 \\ 7980 \\ 53200 \\ \hline 62776 \end{array}$$

(h)

$$\begin{array}{r} 241 \\ \times\ 345 \\ \hline 1205 \\ 9640 \\ 72300 \\ \hline 83145 \end{array}$$

(i)

$$\begin{array}{r} 347 \\ \times\ 189 \\ \hline 3123 \\ 27760 \\ 34700 \\ \hline 65583 \end{array}$$

2. (a)

$$\begin{array}{r} 7454 \\ \times\ 43 \\ \hline 22362 \\ 298160 \\ \hline 320522 \end{array}$$

(b)

$$\begin{array}{r} 5434 \\ \times\ 34 \\ \hline 21736 \\ 163020 \\ \hline 184756 \end{array}$$

(c)

$$\begin{array}{r} 2345 \\ \times\ 29 \\ \hline 21105 \\ 46900 \\ \hline 68005 \end{array}$$

(d)

$$\begin{array}{r} 1357 \\ \times\ 25 \\ \hline 6785 \\ 27140 \\ \hline 33925 \end{array}$$

(e)

$$\begin{array}{r} 4682 \\ \times\ 54 \\ \hline 18728 \\ 234100 \\ \hline 252828 \end{array}$$

(f)

$$\begin{array}{r} 6241 \\ \times\ 234 \\ \hline 24964 \\ 187230 \\ 1248200 \\ \hline 1460394 \end{array}$$

(g)
$$\begin{array}{r} 2206 \\ \times\ 156 \\ \hline 13236 \\ 110300 \\ 220600 \\ \hline 344136 \end{array}$$

(h)
$$\begin{array}{r} 3428 \\ \times\ 343 \\ \hline 10284 \\ 137120 \\ 1028400 \\ \hline 1175804 \end{array}$$

(i)
$$\begin{array}{r} 1678 \\ \times\ 246 \\ \hline 10068 \\ 67120 \\ 335600 \\ \hline 412788 \end{array}$$

(j)
$$\begin{array}{r} 7658 \\ \times\ 464 \\ \hline 30632 \\ 459480 \\ 3063200 \\ \hline 3553312 \end{array}$$

(k)
$$\begin{array}{r} 989 \\ \times\ 562 \\ \hline 1978 \\ 59340 \\ 494500 \\ \hline 555818 \end{array}$$

(l)
$$\begin{array}{r} 682 \\ \times\ 498 \\ \hline 5456 \\ 61380 \\ 272800 \\ \hline 339636 \end{array}$$

(m)
$$\begin{array}{r} 5819 \\ \times\ 326 \\ \hline 34914 \\ 116380 \\ 1745700 \\ \hline 1896994 \end{array}$$

(n)
$$\begin{array}{r} 6847 \\ \times\ 646 \\ \hline 41082 \\ 273880 \\ 4108200 \\ \hline 4423162 \end{array}$$

(o)
$$\begin{array}{r} 6727 \\ \times\ 256 \\ \hline 40362 \\ 336350 \\ 1345400 \\ \hline 1722112 \end{array}$$

3. (a)
$$\begin{array}{r} 798 \\ \times 87 \\ \hline 5586 \\ 63840 \\ \hline 69426 \end{array}$$

(b)
$$\begin{array}{r} 347 \\ \times 95 \\ \hline 1735 \\ 31230 \\ \hline 32965 \end{array}$$

(c)
$$\begin{array}{r} 676 \\ \times 47 \\ \hline 4732 \\ 27040 \\ \hline 31772 \end{array}$$

(d)
$$\begin{array}{r} 2176 \\ \times 3000 \\ \hline 0000 \\ 00000 \\ 000000 \\ \hline 6528000 \\ \hline 6528000 \end{array}$$

(e)
$$\begin{array}{r} 246 \\ \times 27 \\ \hline 1722 \\ 4920 \\ \hline 6642 \end{array}$$

(f)
$$\begin{array}{r} 778 \\ \times 55 \\ \hline 3890 \\ 38900 \\ \hline 42790 \end{array}$$

(g)
$$\begin{array}{r} 677 \\ \times 56 \\ \hline 4062 \\ 33850 \\ \hline 37912 \end{array}$$

(h)
$$\begin{array}{r} 816 \\ \times 58 \\ \hline 6528 \\ 40800 \\ \hline 47328 \end{array}$$

(i)
$$\begin{array}{r} 872 \\ \times 654 \\ \hline 3488 \\ 43600 \\ 523200 \\ \hline 570288 \end{array}$$

(j)
$$\begin{array}{r} 3728 \\ \times\ 287 \\ \hline 26096 \\ 298240 \\ 745600 \\ \hline 1069936 \\ \hline \end{array}$$

(k)
$$\begin{array}{r} 575 \\ \times\ 300 \\ \hline 000 \\ 0000 \\ 172500 \\ \hline 172500 \\ \hline \end{array}$$

(l)
$$\begin{array}{r} 746 \\ \times\ 810 \\ \hline 000 \\ 7460 \\ 596800 \\ \hline 604260 \\ \hline \end{array}$$

(m)
$$\begin{array}{r} 3718 \\ \times\ 289 \\ \hline 33462 \\ 297440 \\ 743600 \\ \hline 1074502 \\ \hline \end{array}$$

(n)
$$\begin{array}{r} 210 \\ \times\ 89 \\ \hline 1890 \\ 16800 \\ \hline 18690 \\ \hline \end{array}$$

4. (a) $13 \times 20 \times 15 = 13 \times 300 = 3900$ **Ans.**
(b) $5 \times 40 \times 8 \times 15 = 200 \times 120 = 24000$ **Ans.**
(c) $4 \times 5 \times 6 \times 12 = 20 \times 72 = 1440$ **Ans.**
(d) $30 \times 15 \times 5 = 30 \times 75 = 2250$ **Ans.**
(e) $8 \times 4 \times 5 \times 15 = 4 \times 5 \times 8 \times 15 = 120 \times 20 = 2400$ **Ans.**
(f) $6 \times 5 \times 14 = 30 \times 14 = 420$ **Ans.**
(g) $25 \times 4 \times 9 = 100 \times 9 = 900$ **Ans.**
(h) $12 \times 5 \times 50 = 60 \times 50 = 3000$ **Ans.**
(i) $15 \times 4 \times 60 = 60 \times 60 = 3600$ **Ans.**

5. Price of a parker pen
= ₹ 432
∴Price of 132 parker pens
=
$$\begin{array}{r} ₹\ 432 \\ \times\ 132 \\ \hline 864 \\ 12960 \\ 43200 \\ \hline ₹\ 57024 \\ \hline \end{array}$$

Hence, the price of 132 parker pens are ₹ 57024**Ans.**

6. An aeroplane carry passengers = 457
∴24 aeroplane carry passengers =
$$\begin{array}{r} 457 \\ \times\ 24 \\ \hline 1828 \\ 9140 \\ \hline 10968 \\ \hline \end{array}$$

Hence 24 aeroplane carry 10968 passengers. **Ans.**

7. Used petrol for a flight
$= 246\,l$
Used petrol for 124 flights =
$$\begin{array}{r} 246\ l \\ \times\ 124 \\ \hline 984 \\ 4920 \\ 24600 \\ \hline 30504\ l \\ \hline \end{array}$$

Hence, 30504 litres petrol it used. **Ans.**

8. Capacity of a fridge = 225 l

Capacity of 64 fridges =

$$\begin{array}{r} 225\ l \\ \times\ 64 \\ \hline 900 \\ 13500 \\ \hline 14400\ l \end{array}$$

Hence, 14400 litres is the capacity of 64 fridges. **Ans.**

9. Sections = 25

Each section has shelves = 40

Each shelves contains books = 248

$\therefore$ Total books

$= 25 \times 40 \times 248 = 1000 \times 248$

$= 248000$

Hence, 248000 books are there in the library. **Ans.**

10. Train travels in an hour = 135 km

Train travels in 28 hours =

$$\begin{array}{r} 135\ \text{km} \\ \times\ 28 \\ \hline 1080 \\ 2700 \\ \hline 3780\ \text{km} \end{array}$$

Hence, required distance = 3780 km. **Ans.**

7. Division of Numbers

Exercise 7 A

1.

	First division fact	Second division fact
(a) $5 \times 7 = 35$	$35 \div 5 = 7$	$35 \div 7 = 5$
(b) $8 \times 8 = 40$	$40 \div 8 = 5$	$40 \div 5 = 8$
(c) $7 \times 9 = 63$	$63 \div 7 = 9$	$63 \div 9 = 7$
(d) $3 \times 7 = 21$	$21 \div 3 = 7$	$21 \div 7 = 3$
(e) $5 \times 9 = 45$	$45 \div 5 = 9$	$45 \div 9 = 5$
(f) $3 \times 8 = 24$	$24 \div 3 = 8$	$24 \div 8 = 3$

2. (a)
$$\begin{array}{r} 9 \\ 5\overline{)\,45} \\ -45 \\ \hline 0 \end{array}$$
$45 \div 5 = 9$
Hence, quotients $= 9$ **Ans.**

(b)
$$\begin{array}{r} 6 \\ 8\overline{)\,48} \\ -48 \\ \hline 0 \end{array}$$
$48 \div 8 = 6$
Hence, quotients $= 6$ **Ans.**

(c)
$$\begin{array}{r} 4 \\ 6\overline{)\,24} \\ -24 \\ \hline 0 \end{array}$$
$24 \div 6 = 4$
Hence, quotients $= 4$ **Ans.**

(d)
$$\begin{array}{r} 8 \\ 9\overline{)\,72} \\ -72 \\ \hline 0 \end{array}$$
$72 \div 9 = 8$
Hence, quotients $= 8$ **Ans.**

(e)
$$\begin{array}{r} 8 \\ 4\overline{)\,3\,2} \\ -3\,2 \\ \hline 0 \end{array}$$
$32 \div 4 = 8$
Hence, quotients = 8 **Ans.**

(f)
$$\begin{array}{r} 7 \\ 9\overline{)\,6\,3} \\ -6\,3 \\ \hline 0 \end{array}$$
$63 \div 9 = 7$
Hence, quotients = 7 **Ans.**

(g)
$$\begin{array}{r} 2 \\ 9\overline{)\,1\,8} \\ -1\,8 \\ \hline 0 \end{array}$$
$18 \div 9 = 2$
Hence, quotients = 2 **Ans.**

(h)
$$\begin{array}{r} 1 \\ 6\overline{)\,6} \\ -6 \\ \hline 0 \end{array}$$
$6 \div 6 = 1$
Hence, quotients = 1 **Ans.**

(i)
$$\begin{array}{r} 9 \\ 6\overline{)\,5\,4} \\ -5\,4 \\ \hline 0 \end{array}$$
$54 \div 6 = 9$
Hence, quotients = 9 **Ans.**

(j)
$$\begin{array}{r} 4 \\ 4\overline{)\,1\,6} \\ -1\,6 \\ \hline 0 \end{array}$$
$16 \div 4 = 4$
Hence, quotients = 4 **Ans.**

(k)
$$\begin{array}{r} 2 \\ 5\overline{)\,1\,0} \\ -1\,0 \\ \hline 0 \end{array}$$
$10 \div 5 = 2$
Hence, quotients = 2 **Ans.**

(l)
$$\begin{array}{r} 4 \\ 7\overline{)\,2\,8} \\ -2\,8 \\ \hline 0 \end{array}$$
$28 \div 7 = 4$
Hence, quotients = 4 **Ans.**

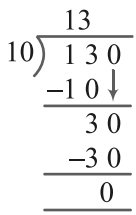
Exercise 7 B

1. (a)
$$\begin{array}{r} 5 \\ 10\overline{)\,5\,0} \\ -5\,0 \\ \hline 0 \end{array}$$
$50 \div 10 = 5$
Hence, quotient = 5 **Ans.**

(b)
$$\begin{array}{r} 3 \\ 10\overline{)\,3\,0} \\ -3\,0 \\ \hline 0 \end{array}$$
$30 \div 10 = 3$
Hence, quotient = 3 **Ans.**

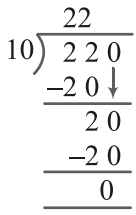
(c)
$$\begin{array}{r} 8 \\ 10\overline{)\,8\,0} \\ -8\,0 \\ \hline 0 \end{array}$$
$80 \div 10 = 8$
Hence, quotient = 8 **Ans.**

(d)
$$\begin{array}{r} 10 \\ 10\overline{)\,1\,0\,0} \\ -1\,0\downarrow \\ \hline 0\,0 \end{array}$$
$100 \div 10 = 10$
Hence, quotient = 10 **Ans.**

(e)


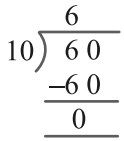
$130 \div 10 = 13$

Hence, quotient = 13**Ans.**

(f)


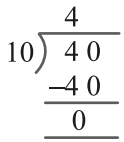
$220 \div 10 = 22$

Hence, quotient = 22**Ans.**

(g)


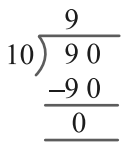
$60 \div 10 = 6$

Hence, quotient = 6 **Ans.**

(h)


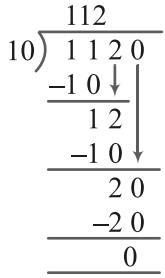
$40 \div 10 = 4$

Hence, quotient = 4 **Ans.**

(i)


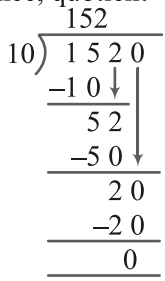
$90 \div 10 = 9$

Hence, quotient = 9 **Ans.**

(j)


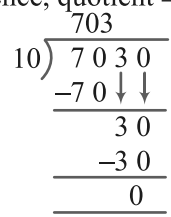
$1120 \div 10 = 112$

Hence, quotient = 112 **Ans.**

(k)


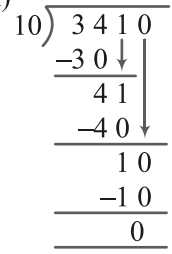
$1520 \div 10 = 152$

Hence, quotient = 152 **Ans.**

(l)


$7030 \div 10 = 703$

Hence, quotient = 703 **Ans.**

(m)


$3410 \div 10 = 341$

Hence, quotient = 341 **Ans.**

(n)
$$\begin{array}{r} 765 \\ 10\overline{)\,7650} \\ -70\downarrow \\ \hline 65 \\ -60\downarrow \\ \hline 50 \\ -50 \\ \hline 0 \end{array}$$

$7650 \div 10 = 765$

Hence, quotient $= 765$ **Ans.**

(o)
$$\begin{array}{r} 619 \\ 10\overline{)\,6190} \\ -60\downarrow \\ \hline 19 \\ -10\downarrow \\ \hline 90 \\ -90 \\ \hline 0 \end{array}$$

$6190 \div 10 = 619$

Hence, quotient $= 619$ **Ans.**

(p)
$$\begin{array}{r} 6 \\ 30\overline{)\,180} \\ -180 \\ \hline 0 \end{array}$$

$180 \div 30 = 6$

Hence, quotient $= 6$ **Ans.**

(q)
$$\begin{array}{r} 3 \\ 70\overline{)\,210} \\ -210 \\ \hline 0 \end{array}$$

$210 \div 70 = 3$

Hence, quotient $= 3$ **Ans.**

(r)
$$\begin{array}{r} 8 \\ 70\overline{)\,560} \\ -560 \\ \hline 0 \end{array}$$

$560 \div 70 = 8$

Hence, quotient $= 8$ **Ans.**

(s)
$$\begin{array}{r} 3 \\ 20\overline{)\,60} \\ -60 \\ \hline 0 \end{array}$$

$60 \div 20 = 3$

Hence, quotient $= 3$ **Ans.**

(t)
$$\begin{array}{r} 2 \\ 40\overline{)\,80} \\ -80 \\ \hline 0 \end{array}$$

$80 \div 40 = 2$

Hence, quotient $= 2$ **Ans.**

(u)
$$\begin{array}{r} 9 \\ 20\overline{)\,180} \\ -180 \\ \hline 0 \end{array}$$

$180 \div 20 = 9$

Hence, quotient $= 9$ **Ans.**

(v)
$$\begin{array}{r} 30 \\ 30\overline{)\,900} \\ -90\downarrow \\ \hline 00 \end{array}$$

$900 \div 30 = 30$

Hence, quotient $= 30$ **Ans.**

(w)
$$\begin{array}{r} 40 \\ 20\overline{)\,800} \\ -80\downarrow \\ \hline 00 \end{array}$$

$800 \div 20 = 40$

Hence, quotient $= 40$ **Ans.**

(x)
$$\begin{array}{r} 4 \\ 80\overline{)\,320} \\ -320 \\ \hline 0 \end{array}$$

$320 \div 80 = 4$

Hence, quotient $= 4$ **Ans.**

Exercise 7 C

1. (a) $86 \div 29$ is approximately $90 \div 30 = 9 \div 3 = 3$
Thus, the estimated quotient is 3. **Ans.**

(b) $81 \div 17$ is approximately $80 \div 20 = 8 \div 2 = 4$
Thus, the estimated quotient is 4. **Ans.**

(c) $86 \div 26$ is approximately $90 \div 30 = 9 \div 3 = 3$
Thus, the estimated quotient is 3. **Ans.**

(d) $190 \div 24$ is approximately $190 \div 20$, which is approximately 9.
Thus, the estimated quotient is 9. **Ans.**

(e) $715 \div 23$ is approximately $720 \div 20 = 72 \div 2 = 36$
Thus, the estimated quotient is 36. **Ans.**

(f) $279 \div 31$ is approximately $280 \div 30 = 28 \div 3$, which is approximately 9.
Thus, the estimated quotient is 9. **Ans.**

(g) $661 \div 52$ is approximately $660 \div 50 = 66 \div 5$, which is approximately 13.
Thus, the estimated quotient is 13. **Ans.**

(h) $504 \div 66$ is approximately $500 \div 70 = 50 \div 7$, which is approximately 7.
Thus, the estimated quotient is 7. **Ans.**

(i) $427 \div 26$ is approximately $420 \div 30 = 42 \div 3 = 13$
Thus, the estimated quotient is 13. **Ans.**

(j) $275 \div 25$ is approximately $270 \div 30 = 27 \div 3 = 9$
Thus, the estimated quotient is 9. **Ans.**

(k) $632 \div 33$ is approximately $630 \div 30 = 63 \div 3 = 21$
Thus, the estimated quotient is 21. **Ans.**

(l) $390 \div 42$ is approximately $400 \div 40 = 40 \div 4 = 10$
Thus, the estimated quotient is 10. **Ans.**

(m) $858 \div 39$ is approximately $900 \div 40 = 90 \div 4$, which is approximately 22.
Thus, the estimated quotient is 22. **Ans.**

(n) $758 \div 32$ is approximately $800 \div 30 = 80 \div 3$, which is approximately 26.
Thus, the estimated quotient is 26. **Ans.**

(o) $868 \div 37$ is approximately $900 \div 40 = 90 \div 4$, which is approximately 22.
Thus, the estimated quotient is 22. **Ans.**

(p) $729 \div 29$ is approximately $730 \div 30 = 73 \div 3$, which is approximately 24.
Thus, the estimated quotient is 24. **Ans.**

(q) $762 \div 28$ is approximately $= 760 \div 30 = 76 \div 3$, which is approximately 25.
Thus, the estimated quotient is 25. **Ans.**

(r) $643 \div 38$ is approximately $640 \div 40 = 64 \div 4 = 16$
Thus, the estimated quotient is 16. **Ans.**

2. Production of cloth mill in April month = 15780 metres
Production of cloth mill in April month everyday
$= 15780 \div 30$

```
      526
30 ) 15780
    -150
     ----
      780
     -600
     ----
      180
     -180
     ----
        0
```

Hence, 526 m cloth is the daily production of the mill. **Ans.**

3. Number of rows = 264
Number of soldiers = 53064
Number of soldiers in each row $= 53064 \div 264$

```
      201
264 ) 53064
     -528
     ----
      264
     -264
     ----
        0
```

Hence, 201 soldiers were standing in each row. **Ans.**

4. Total huts = 101
Total cost of huts
= ₹ 816282
Cost of each hut
= ₹ $816282 \div 101$

```
      8082
101 ) 816282
     -808
     ----
       828
      -808
      ----
        202
       -202
       ----
          0
```

Hence, ₹ 8082 was spent on building each hut. **Ans.**

5. Dividend = 5984
Divisor = 34

```
      176
34 ) 5984
     -34
     ---
      258
     -238
     ----
       204
      -204
      ----
         0
```

Hence, the quotient is 176. **Ans.**

6. Dividend = 89012
Quotient = 17

```
      5236
17 ) 89012
     -85
     ---
      40
     -34
     ---
       61
      -51
      ---
       102
      -102
      ----
         0
```

Hence, the divisor = 5236 **Ans.**

7. Divisor = 27, Quotient = 103, Remainder = 7
Dividend = Divisor × Quotient + Remainder
= 27 × 103 + 7
= 2781 + 7 = 2788
Hence, the number = 2788 **Ans.**

8. Divisor = 357, Quotient = 29, Remainder = 0
Dividend = Divisor × Quotient + Remainder
= 357 × 29 + 0 = 10353
Hence, the dividend = 10353. **Ans.**

9. Product of two numbers = 13260
One of the number = 204
Hence, other number = 13260 ÷ 204

```
      65
204 ) 13260
     -1224
      1020
     -1020
         0
```

Hence, the other number = 65

10. Sum of the number = 380
smaller number = 125
Then, other number = 380 − 125 = 255
Product of the numbers
= 125 × 255 = 31875
Hence, the product of the numbers is 31875. **Ans.**

11. Total money
= ₹ 271355
Total children
= 4 + 3 = 7
Each child get money
= ₹ 271355 ÷ 7
= ₹ 38765

```
      38765
7 ) 271355
   -21↓
     61
    -56↓
      53
     -49↓
       45
      -42↓
        35
       -35
         0
```

Hence, ₹ 38765 each child get **Ans.**

12. Product of two numbers = 13260
One of the number = 204
Then, other number = 13260 ÷ 204
= 65
The sum of the number
= 204 + 65 = 269

```
      65
204 ) 13260
     -1224
      1020
     -1020
         0
```

Hence, the sum of the two number is 269. **Ans.**

13. Difference of two numbers = 345
The greater number = 630
Difference = 630 − 345 = 285
The product of the numbers
= 345 × 285 = 98325
Hence, the product of the two numbers = 98325 **Ans.**

Skill Test-1

1 .

Hindu-Arabic Numeral	40	49	68	11	97	799	55
Roman numeral	XL	XLIX	LXVI II	XI	XCV II	LXXI X	LV

2. (a) V (b) X (c) XXXVII

3. (a) $XLIV < 9 \times 6$ (b) $LXX > 100 - 36$ (c) $81 - 32 < L$

4. (a) XC (b) LXIII (c) XLV

5. (a) four (b) six (c) six

6. (a) The place value of $9 = 9000000$
The place value of $6 = 60000$
Difference $= 9000000 - 60000 = 8940000$
Hence, Difference $= 8940000$ **Ans.**

(b) The place value of $5 = 500000$
The place value of $7 = 700$ **Ans.**

7. (a) 66967, 68967, 70967, 72967, 74967, 76967
(b) 97097, 98097, 99097, 100097, 101097, 102097
(c) 98565, 98575, 98585, 95595, 98605, 98615

8. (a) False (b) False (c) True

9. (a) The number must be added $= 60150 - 48461 = 11689$
Hence, 11689 must be added. **Ans.**

(b) 1 lakh more than $60666 = 100000 - 60666 = 39334$
Hence, 39334 is 1 lakh more than 60666. **Ans.**

(c) The number must be subtracted $= 50000 - 28364 = 21636$
Hence, 21636 must be subtracted. **Ans.**

10. Cost of 18 tickets = ₹ 86886
$\therefore$ Cost of 1 ticket = ₹ $86886 \div 18$ = ₹ 4827
Hence, the cost of one ticket = ₹ 4827. **Ans.**

11. Minutes in month of April $= 30 \times 24 \times 60 = 720 \times 60 = 43200$
Hence, 43200 minutes are there in month of April. **Ans.**

12. Greatest 4-digit number $= 9999$
Smallest 2-digit number $= 10$
Multiplication $= 9999 \times 10 = 99990$. **Ans.**

13. (a) $10646 \div 47$

$$\begin{array}{r} 226 \\ 47\overline{)\,10646} \\ -94 \\ \hline 124 \\ -94 \\ \hline 306 \\ -282 \\ \hline 24 \end{array}$$

Hence, Quotient = 226 and Remainder = 24 **Ans.**

(b) $79041 \div 53$

$$\begin{array}{r} 1491 \\ 53\overline{)\,79041} \\ -53 \\ \hline 260 \\ -212 \\ \hline 484 \\ -477 \\ \hline 71 \\ -53 \\ \hline 18 \end{array}$$

Hence, Quotient = 1491 and Remainder = 18 **Ans.**

(c) $603505 \div 86$

$$\begin{array}{r} 7017 \\ 86\overline{)\,603505} \\ -602 \\ \hline 150 \\ -86 \\ \hline 645 \\ -602 \\ \hline 43 \end{array}$$

Hence, Quotient = 7017 and Remainder = 43 **Ans.**

14. (i) (b) 35 (ii) (d) 15600
(iii) (b) 173 (iv) (a) 50
(v) (a) $180 \div 15 = 12$ (vi)
(b) 1 (vii) (d) ten-thousands
(viii) (c) X cannot be subtracted from L.
(ix) (a) 5000
(x) (b) 25514
(xi) (d) 3293 (xii) (d) 48

8. Multiples And Factors

Exercise 8 A

1. (a) $3 \times 5 = 15$; so 15 is multiple of 3 and 5.
(b) $2 \times 4 \times 5 = 40$; so 40 is multiple of 2, 4 and 5.
(c) $7 \times 2 = 14$; so 14 is mutliple of 7 and 2.
(d) $4 \times 9 = 36$; so 36 is a mutliple of 4 and 9.
2. (a) Multiple of 5 are 15, 20 (b) Multiples of 10 are 20, 90, 100
3. 16 **4.** 60 **5.** 9 **6.** 36 **7.** 2, 4, 6
8. 3, 6, 9, 12 **9.** 4, 8, 12, 16, 20 **10.** 7, 14, 21, 28, 35, 42
11. 16, 20, 24, 28, 32, **12.** 8, 16, 24 **13.** (i) 8, (iii) 9, (iv) 4
14. (a) 5, 10, 15, 20, 25, 30 (b) 6, 12, 18, 24, 30, 36
15. (a) even (b) odd (c) odd (d) even
16. 28, 30, 32, 34, 36, 38, 40
17. 133, 135, 137, 139, 141, 143, 145, 147, 149, 151
18. 38 **19.** 51 **20.** 98 **21.** 101 **22.** 72

23. 109 **24.** (a) 2, 4, 6, 8, 10, 12, 14, 16, 18, 20
(b) 80, 82, 84, 86, 88, 90, 92, 94, 96, 98
(c) 1, 3, 5, 7, 9, 11, 13, 15, 17, 19
(d) 81, 83, 85, 87, 89, 91, 93, 95, 97, 99
(e) 1 (f) 2

24. (a) The first ten even numbers are 2, 4, 6, 8, 10, 12, 14, 16, 18, 20. **Ans.**
(b) The lastter two digit even numbers are 80, 82, 84, 86, 88, 90, 92, 94, 96, 98. **Ans.**
(c) The first tesodd numbers are 1,3,5,7,9,11,13,15,17,19. **Ans.**
(d) The last ter two digit odd numbers are 81,83,85,87,89,91,93,95,99,99. **Ans.**
(e) The smdlest odd numbers is 1. **Ans.**
(f) The smallest even number is 2. **Ans.**

25. (a) 42 (b) 120

26. (a) (3), (5), (7), 6, 8 (b) (17), (1), 16, 10, 4, 2

Exercise 8 B

1. (a) $9 \times 7 = 63$. So, 9 and 7 are factors of 63.
(b) $12 \times 6 = 72$. So, 12 and 6 are factors of 72.
(c) $6 \times 8 = 48$. So, 6 and 8 are factors of 48.
(d) $15 \times 6 = 90$. So, 15 and 6 are factors of 90.

2. (a) $14 = 1 \times 14$ and $14 = 2 \times 7$ $\therefore$ The factors of 14 are 1, 2, 7, 14. **Ans.**
(b) $25 = 1 \times 25$ and $25 = 5 \times 5$ $\therefore$ The factors of 25 are 1, 5, 25. **Ans.**
(c) $40 = 1 \times 40$; $40 = 2 \times 20$; $40 = 4 \times 10$; $40 = 5 \times 8$
$\therefore$ The factors of 40 are 1, 2, 4, 5, ,8, 10, 20, 40. **Ans.**
(d) $64 = 1 \times 64$; $64 = 2 \times 32$; $64 = 4 \times 16$; $64 = 8 \times 8$
$\therefore$ The factors of 64 are 1, 2, 4, 8, 16, 32, 64. **Ans.**
(e) $100 = 1 \times 100$; $100 = 2 \times 50$; $100 = 4 \times 25$; $100 = 5 \times 20$; $100 = 10 \times 10$
$\therefore$ The factors of 100 are 1, 2, 4, 5, 10, 20, 25, 50, 100. **Ans.**
(f) $125 = 1 \times 125$ $125 = 5 \times 25$
$\therefore$ The factors of 125 are 1, 5, 25, 125. **Ans.**

3. (a) $32 = 2 \times 16$ $32 = 4 \times 8$
$\therefore$ The three factors of 32 are 2, 4, 8. **Ans.**
(b) $48 = 2 \times 24$ $48 = 4 \times 12$
$\therefore$ The three factors of 48 are 2, 4, 12. **Ans.**
(c) $64 = 2 \times 32$ $64 = 4 \times 16$
$\therefore$ The three factors of 64 are 2, 4, 16. **Ans.**

(d) $84 = 2 \times 42$ $84 = 4 \times 21$
$\therefore$ The three factors of 84 are 2, 4, 21. **Ans.**
(e) $124 = 2 \times 62$ $124 = 4 \times 31$
$\therefore$ The three factors of 124 are 2, 4, 31. **Ans.**
(f) $700 = 2 \times 350$ $700 = 4 \times 175$
Hence, the three factors of 700 are 2, 4, 175. **Ans.**

4. (a) $18 = 2 \times 9$ $18 = 3 \times 6$
Hence, the four factors of 18 are 2, 3, 6, 9. **Ans.**
(b) $42 = 2 \times 21$ $42 = 6 \times 7$
Hence, the four factors of 42 are 2, 6, 7, 21. **Ans.**
(c) $72 = 2 \times 36$ $72 = 6 \times 12$
Hence, the four factors of 72 are 2, 6, 12, 36. **Ans.**
(d) $112 = 2 \times 56$ $112 = 4 \times 28$
Hence, the four factors of 112 are 2, 4, 28, 56. **Ans.**
(e) $256 = 2 \times 128$ $256 = 4 \times 64$
Hence, the four factors of 256 are 2, 4, 64, 128. **Ans.**
(f) $640 = 2 \times 320$ $640 = 4 \times 160$
Hence, the four factors of 640 are 2, 4, 160, 320. **Ans.**

5. 1, 2, 4, 7, 14

6. (a) Yes (b) Yes (c) No (d) Yes (e) Yes

Exercise 8 C

1. (a) 100, 524 (b) 346, 4, 5002, 10100
(c) 4, 8, 6 (d) 24, 30

2. (a) 10, 30, 70 (b) 1200, 470

3. (a) 732 (b) 12345, 3150 (c) 12, 45, 96 (d) 6, 9

4. (a) 110, 215, 870, 900 (b) 1235, 3550, 6065
(c) 10, 35, 60, 95 (d) 5

5. Yes, the numbers 6042 and 4186 are divisible by 2.
Sum of the number $= 6042 + 4186 = 10228$
Hence, yes their sum also divisible by 2. **Ans.**

6. Yes the numbers 3450 and 6666 are divisible by 2.
Sum of the number $= 3450 + 6666 = 10116$
Hence, yes their sum also divisible by 2. **Ans.**

7. (a) 20, 40, 60, 80, 90 (b) 20, 40, 60, 80, 90

8. The number of days of April, June, September, November are divisible by 2 as well as 5.

9. (a) 36, 38, 40, 42, 44, 46, 48, 50, 52, 54
(b) 40, 45, 50 (c) 40, 50 (d) 40, 50 (e) 40, 50
(f) 36, 42, 48, 54

10. (a) $1456 + 4 = 1460$
$\because$ 1460 divisible by 5. Hence, the required number is 4. **Ans.**
(b) $43217 + 3 = 43220$
$\because$ 43220 divisible by 5. Hence, the required number is 3. **Ans.**
(c) $100003 + 2 = 100005$
$\because$ 100005 divisible by 5. Hence, the required number is 2. **Ans.**

11. (a) $1234 - 4 = 1230$
$\because$ 1230 divisible by 10. Hence, the required number is 4. **Ans.**
(b) $45679 - 9 = 45670$
$\because$ 45670 divisible by 10. Hence, the required number is 9. **Ans.**
(c) $90003 - 3 = 90000$
$\because$ 90000 divisible by 10. Hence, the required number is 3. **Ans.**

Exercise 8 D

1. (a) The ones place number is 6
So, the number 7826 is divisible by 2. **Ans.**
(b) The ones place number is 9.
So, the number 3549 is not divisible by 2. **Ans.**
(c) The ones place number is 6.
So, the number 25286 is divisible by 2. **Ans.**
(d) The ones place number is 2.
So, the number 112 is divisible by 2. **Ans.**

2. (a) The sum of all numbers $= 2 + 8 + 5 + 6 = 21$
Since 21 is divisible by 3. So the number 2856 is divisible by 3. **Ans.**
(b) The sum of all numbers $= 5 + 6 + 3 + 1 = 15$
Since, 15 is divisible by 3. So the number is 5631 is divisible by 3. **Ans.**
(c) The sum of all numbers $= 8 + 6 + 0 + 0 = 14$
Since, 14 is not divisible by 3. So, the number 8600 is not divisible by 3. **Ans.**
(d) The sum of all numbers $= 9 + 8 + 6 + 6 = 29$
Since, 29 is not divisible by 3. So, the number 9866 is not divisible by 3. **Ans.**

3. (a) The ones place number is 8.
So, the number 5628 is not divisible by 5. **Ans.**
(b) The ones place number is 0.
So, the number 2350 is divisible by 5. **Ans.**

(c) The ones place number is 6.
So, the number 9876 is not divisible by 5. **Ans.**

(d) The ones place of the number is 5.
So, the number 3345 is divisible by 5. **Ans.**

4. (a) The sum all of the number $= 1+5+6+6=18$
Since, 18 is divisible by 6. So, the number 1566 is divisible by 6. **Ans.**

(b) The sum of all of the number $= 2+3+8+3+6=22$
Since, 22 is not divisible by 6. So, the number 23836 is not divisible by 6. **Ans.**

(c) The sum of all of the number $= 5+5+4+4=18$
Since, 18 is divisible by 6. So, the number 5544 is divisible by 6. **Ans.**

(d) The sum of all of the number $= 4+0+8+7+2=21$
Since, 21 is not divisible by 6. So, the number 40872 is not divisible by 6. **Ans.**

5. (a) The sum all of the number $= 7+8+8+4=27$
Since, 27 is divisible by 9. So, the number 7884 is divisible by 9. **Ans.**

(b) The sum all of the number $= 6+0+3+0+9=18$
Since, 18 is divisible by 9. So, the number 60309 is divisible by 9. **Ans.**

(c) The sum all of the number $= 1+7+8+2=18$
Since, 18 is divisible by 9. So, the number 1782 is divisible by 9. **Ans.**

(d) The sum all of the number $= 1+7+3+1=12$
Since, 12 is not divisible by 9. So, the number 1731 is not divisible by 9. **Ans.**

6. (a) 60, (b) 50, (c) 120, (d) 155

7. (a) 40, (b) 48, (f) 64

8. (a) 7, 14, 21, 28
(b) 5, 10, 15, 20
(c) 16, 32, 48, 64

9. (a) 23, 29 (b) 31, 37

10. (a) 26, 28, 30, 32, 34
(b) 50, 54, 56, 58

9. Highest Common Factor

Exercise 9 A

1. (a) All factors of 10 and 15.

$10 = 1 \times 10 = 2 \times 5$ and $15 = 1 \times 15 = 3 \times 5$

All factors of $10 = 1, 2, 5, 10$

All factors of $15 = 1, 3, 5, 15$

The highest common factors of 10 and 15 are 5. **Ans.**

(b) All factors of 8 and 12.

$8 = 1 \times 8 = 2 \times 4$ and $12 = 1 \times 12 = 3 \times 4$

All factors of $8 = 1, 2, 4, 8$

All factors of $12 = 1, 3, 4, 12$

The highest common factors of 8 and 12 are 4. **Ans.**

(c) All factors of 14 and 21.

$14 = 1 \times 14 = 2 \times 7$ and $21 = 1 \times 21 = 3 \times 7$

All factors of $14 = 1, 2, 7, 14$

All factors of $21 = 1, 3, 7, 21$

The highest common factor of 14 and 21 are 7. **Ans.**

(d) All factors of 12 and 18

$12 = 1 \times 12 = 2 \times 6 = 3 \times 4$ and $18 = 1 \times 18 = 3 \times 6 = 2 \times 9$

All factors of $12 = 1, 2, 3, 4, 6, 12$

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

The highest common factor of 12 and 18 are 6. **Ans.**

(e) All factors of 15 and 20.

$15 = 1 \times 15 = 3 \times 5$ and $20 = 1 \times 20 = 4 \times 5 = 2 \times 10$

All factors of $15 = 1, 3, 5, 15$

All factors of $20 = 1, 2, 4, 5, 10, 20$

The highest common factor of 15 and 20 is 5. **Ans.**

(f) All factors of 20 and 24.

$20 = 1 \times 20 = 4 \times 5 = 2 \times 10$ and $24 = 1 \times 24 = 2 \times 12 = 3 \times 8 = 4 \times 6$

All factors of $20 = 1, 2, 4, 5, 10, 20$

All factors of $24 = 1, 2, 3, 4, 6, 8, 12, 24$

The highest common factor of 20 and 24 is 4. **Ans.**

(g) All factors of 24 and 28.

$24 = 1 \times 24 = 2 \times 12 = 3 \times 8 = 4 \times 6$ and $28 = 1 \times 28 = 2 \times 14 = 4 \times 7$

All factors of $24 = 1, 2, 3, 4, 6, 8, 12, 24$

All factors of $28 = 1, 2, 4, 7, 14, 28$

Hence, the highest common factor of 24 and 28 is 4. **Ans.**

(h) All factors of 24 and 30.

$24 = 1 \times 24 = 2 \times 12 = 3 \times 8 = 4 \times 6$

and $30 = 1 \times 30 = 2 \times 15 = 5 \times 6 = 10 \times 3$

All factors of 24 = 1, 2, 3, 4, 6, 8, 12, 24

All factors of 30 = 1, 2, 3, 5, 6, 10, 15, 30

Hence, the highest common factor of 24 and 30 is 6. **Ans.**

(i) All factors of 24 and 32.

$24 = 1 \times 24 = 2 \times 12 = 3 \times 8 = 6 \times 4$ and $32 = 1 \times 32 = 2 \times 16 = 4 \times 8$

All factors of 24 = 1, 2, 3, 4, 6, 8, 12, 24

All factors of 32 = 1, 2, 4, 8, 16, 32

Hence, the highest common factor of 24 and 32 is 8. **Ans.**

(j) All factors of 28 and 32

$28 = 1 \times 28 = 2 \times 14 = 4 \times 7$ and $32 = 1 \times 32 = 2 \times 16 = 4 \times 8$

All factors of 28 = 1, 2, 4, 7, 14, 28

All factors of 32 = 1, 2, 4, 8, 16, 32

Hence, the highest common factor of 28 and 32 is 4. **Ans.**

(k) All factors of 25 and 35.

$25 = 1 \times 25 = 5 \times 5$ and $35 = 1 \times 35 = 5 \times 7$

All factors of 25 = 1, 5, 25

All factors of 35 = 1, 5, 7, 35

Hence, the highest common factor of 25 and 35 is 5. **Ans.**

(l) All factors of 35 and 42.

$35 = 1 \times 35 = 5 \times 7$ and $42 = 1 \times 42 = 2 \times 21 = 3 \times 14 = 7 \times 6$

All factors of 35 = 1,5, 7, 35

All factors of 42 = 1, 2, 3, 6, 7, 14, 21, 42

Hence, the highest common factor of 35 and 42 is 7. **Ans.**

(m) All factors of 8, 12 and 20.

$8 = 1 \times 8 = 2 \times 4, 12 = 1 \times 12 = 2 \times 6 = 3 \times 4$

and $20 = 1 \times 20 = 2 \times 10 = 4 \times 5$

All factors of 8 = 1, 2, 4, 8

All factors of 12 = 1, 2, 3, 4, 6, 12

All factors of 20 = 1, 2, 4, 5, 10, 20

Hence, the highest common factor of 8, 12 and 20 is 4. **Ans.**

(n) All factors of 10, 15 and 25.

$10 = 1 \times 10 = 2 \times 5, 15 = 1 \times 15 = 3 \times 5$ and $25 = 1 \times 25 = 5 \times 5$

All factors of 10 = 1, 2, 5, 10

All factors of 15 = 1, 3, 5, 15

All factors of 25 = 1, 5, 25

Hence, the highest common factor of 10, 15 and 25 is 5.**Ans.**

(o) All factors of 16, 24 and 28.

$16 = 1 \times 16 = 2 \times 8 = 4 \times 4$, $24 = 1 \times 24 = 3 \times 8 = 2 \times 12 = 6 \times 4$

and $28 = 1 \times 28 = 2 \times 14 = 4 \times 7$

All factors of $16 = 1, 2, 4, 8, 16$

All factors of $24 = 1, 2, 3, 4, 6, 8, 12, 24$

All factors of $28 = 1, 2, 4, 7, 14, 28$

Hence, the highest common factor of 16, 24 and 28 is 4.**Ans.**

(p) All factors of 25, 35 and 45.

$25 = 1 \times 25 = 5 \times 5$, $35 = 1 \times 35 = 5 \times 7$

and $45 = 1 \times 45 = 3 \times 15 = 5 \times 9$

All factors of $25 = 1, 5, 25$

All factors of $35 = 1, 5, 7, 35$

All factors of $45 = 1, 3, 5, 9, 15, 45$

Hence, the highest common factor of 15, 25 and 35 is 5.**Ans.**

2. (a) Factors of $8 = 8 \times 1 = 2 \times 4$

$\therefore$Factors of $8 = 1, 2, 4, 8$

Factors of $15 = 1 \times 15 = 3 \times 5$

$\therefore$Factors of $15 = 1, 3, 5, 15$

$\therefore$Common factor of 8 and $15 = 1$

Hence, 8 and 15 are co-prime. **Ans.**

(b) $18 = 1 \times 18 = 9 \times 2 = 3 \times 6$ and $24 = 1 \times 24 = 3 \times 8 = 2 \times 12 = 4 \times 6$

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

All factors of $24 = 1, 2, 3, 4, 6, 8, 12, 24$

$\therefore$Common factor of 18 and $24 = 1, 2, 3, 6$

Hence, 18 and 24 are co-divisible. **Ans.**

(c) $50 = 1 \times 50 = 5 \times 10 = 25 \times 2$ and $60 = 1 \times 60 = 6 \times 10 = 30 \times 2$

All factors of $50 = 1, 2, 5, 10, 25, 50$

All factors of $60 = 1, 2, 6, 10, 30, 60$

$\therefore$Common factor of 50 and $60 = 1, 2, 10$

Hence, 50 and 60 are co-divisible. **Ans.**

(d) $25 = 1 \times 25 = 5 \times 5$ and $36 = 1 \times 36 = 6 \times 6 = 3 \times 12 = 4 \times 9 = 2 \times 18$

All factors of $25 = 1, 5, 25$

All factors of $36 = 1, 2, 3, 4, 6, 9, 12, 18, 36$

$\therefore$Common factor of 25 and $36 = 1$

Hence, 25 and 36 are co-prime. **Ans.**

(e) $27 = 1 \times 27 = 3 \times 9$ and $35 = 1 \times 35 = 5 \times 7$

All factors of $27 = 1, 3, 9, 27$

All factors of $35 = 1, 5, 7, 35$

$\therefore$Common factor of 27 and $35 = 1$

Hence, 27 and 35 are co-prime. **Ans.**

(f) $28 = 1 \times 28 = 2 \times 14 = 4 \times 7$ and $42 = 1 \times 42 = 2 \times 21 = 6 \times 7$
All factors of $28 = 1, 2, 4, 7, 14, 28$
All factors of $42 = 1, 2, 6, 7, 21, 42$
$\therefore$ Common factors of 28 and $42 = 1, 2, 7$
Hence, 28 and 42 are co-divisible. **Ans.**

(g) $24 = 1 \times 24 = 2 \times 12 = 4 \times 6$ and $49 = 1 \times 49 = 7 \times 7$
All factors of $24 = 1, 2, 4, 6, 12, 24$
All factors of $49 = 1, 7, 49$
$\therefore$ Common factor of 24 and $49 = 1$
Hence, 24 and 49 are co-prime. **Ans.**

(h) $40 = 1 \times 40 = 2 \times 20 = 4 \times 10 = 5 \times 8$ and $91 = 1 \times 91 = 7 \times 13$
All factors of $40 = 1, 2, 4, 5, 8, 10, 20, 40$
All factors of $91 = 1, 7, 13, 91$
$\therefore$ Common factor of 40 and $91 = 1$
Hence, 40 and 91 are co-prime. **Ans.**

Exercise 9 B

1. (a)

2	10
5	5
	1

3	15
5	5
	1

$10 = 2 \times 5$ $15 = 3 \times 5$
All common prime factors of both the numbers $= 5$
Hence, highest common factor of 10 and $15 = 5$ **Ans.**

(b)

2	12, 18
3	6, 9
	2, 3

All common prime factors of both the numbers
$= 2 \times 3 = 6$
Hence, the H.C.F. of 12 and 18 is 6. **Ans.**

(c)

2	12, 16
2	6, 8
	3, 4

All common prime factors of both the numbers
$= 2 \times 2 = 4$
Hence, the H.C.F. of 12 and 16 is 4. **Ans.**

(d)

2	8, 12
2	4, 6
	2, 3

All common prime factors of both the numbers $= 2 \times 2 = 4$
Hence, the H.C.F. of 8 and 12 is 4. **Ans.**

(e)

3	9, 15
	3, 5

All common prime factors of the numbers $= 3$
Hence, the H.C.F. of 9 and 15 is 3. **Ans.**

(f)

2	16, 20
2	8, 10
	4, 5

All common prime factors of both the numbers $= 2 \times 2 = 4$
Hence, the H.C.F. of 16 and 20 is 4. **Ans.**

(g)

5	15, 25
	3, 5

All common prime factors of both the numbers $= 5$
Hence, the H.C.F. of 15 and 25 is 5. **Ans.**

(h)

3	18, 21
	6, 7

All common prime factors of both the numbers $= 3$
Hence, the H.C.F. of 18 and 21 is 3. **Ans.**

(i)

3	15, 21
	5, 7

All common prime factors of both the numbers $= 3$
Hence, the H.C.F. of 15 and 21 is 3. **Ans.**

(j)

3	18, 30
2	6, 10
	3, 5

All common prime factors of both the numbers $= 3 \times 2 = 6$
Hence, the H.C.F. of 18 and 30 is 6. **Ans.**

(k)

2	24, 30
3	12, 15
	4, 5

All common prime factors of both the numbers $= 2 \times 3 = 6$
Hence, the H.C.F. of 24 and 30 is 6. **Ans.**

(l)

3	18, 27
3	6, 9
	2, 3

All common prime factors of both the numbers
$= 3 \times 3 = 9$
Hence, the H.C.F. of 18 and 27 is 9. **Ans.**

(m)

17	17, 27
	17, 27

All common prime factors of both the numbers $= 1$
Hence, the H.C.F. of 17 and 27 is 1. **Ans.**

(n)

7	28, 35
	4, 5

All common prime factors of both the numbers $= 7$
Hence, the H.C.F. of 28 and 35 is 7. **Ans.**

2. (a)

2	32, 40
2	16, 20
2	8, 10
	4, 5

All common prime factors of both the numbers
$= 2 \times 2 \times 2 = 8$
Hence, the H.C.F. of 32 and 40 is 8. **Ans.**

(o)

2	24, 32
2	12, 16
2	6, 8
	3, 4

All common prime factors of both the numbers
$= 2 \times 2 \times 2 = 8$
Hence, the H.C.F. of 24 and 32 is 8. **Ans.**

(p)

3	27, 36
3	9, 12
	3, 4

All common prime factors of both the numbers
$= 3 \times 3 = 9$
Hence, H.C.F. of 27 and 36 is 9. **Ans.**

(b)

2	32, 48
2	16, 24
2	8, 12
2	4, 6
	2, 3

All common prime factors of both the numbers
$= 2 \times 2 \times 2 \times 2 = 16$
Hence, the H.C.F. of 32 and 48 is 16. **Ans.**

(c)

2	36, 48
2	18, 24
3	9, 12
	3, 4

All common prime factors of both the numbers $= 2 \times 2 \times 3 = 12$
Hence, the H.C.F. of 36 and 48 is 12. **Ans.**

(d)

2	36, 60
2	18, 30
3	9, 15
	3, 5

All common prime factors of both the numbers $= 2 \times 2 \times 3 = 12$
Hence, the H.C.F. of 36 and 60 is 12. **Ans.**

(e)

2	40, 48
2	20, 24
2	10, 12
	5, 6

All common prime factors of both the numbers $= 2 \times 2 \times 2 = 8$
Hence, the H.C.F. of 40 and 48 is 8. **Ans.**

(f)

11	33, 44
	3, 4

All common prime factors of both the numbers $= 11$
Hence, the H.C.F. of 33 and 44 is 11. **Ans.**

(g)

2	20, 48
2	10, 24
	5, 12

All common prime factors of both the numbers $= 2 \times 2 = 4$
Hence, the H.C.F. of 20 and 48 is 4. **Ans.**

(h)

2	40, 56
2	20, 28
2	10, 14
	5, 7

All common prime factors of both the numbers $= 2 \times 2 \times 2 = 8$
Hence, the H.C.F. of 40 and 56 is 8. **Ans.**

(i)

2	12, 18, 44
	6, 9, 22

All common prime factors of all the numbers $= 2$
Hence, the H.C.F. of 12, 18 and 44 is 2. **Ans.**

(j)

7	21, 35, 77
	3, 5, 11

All common prime factors of all the numbers $= 7$.
Hence, the H.C.F. of 21, 35 and 77 is 7. **Ans.**

(k)

3	54, 81, 108
3	18, 27, 36
3	6, 9, 12
	2, 3, 4

All common prime factors of all the numbers $= 3 \times 3 \times 3 = 27$
Hence, the H.C.F. of 54, 81 and 108 is 27. **Ans.**

(l)

2	68, 76, 96
2	34, 38, 48
	17, 19, 24

All common prime factors of all the numbers $= 2 \times 2 = 4$
Hence, the H.C.F. of 68, 76 and 96 is 4. **Ans.**

(m)

2	384, 512
2	192, 256
2	96, 128
2	48, 64
2	24, 32
2	12, 16
2	6, 8
	3, 4

All common prime factors of both the numbers
$= 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 = 128$
Hence, the H.C.F. of 384 and 512 is 128. **Ans.**

(n)

2	216, 372
2	108, 186
3	54, 93
	18, 31

All common prime factors of both the numbers
$= 2 \times 2 \times 3 = 12$
Hence, the H.C.F. of 216 and 372 is 12. **Ans.**

(o)

2	112, 160
2	56, 80
2	28, 40
2	14, 20
	7, 10

All common prime factors of both the numbers
$= 2 \times 2 \times 2 \times 2 = 16$
Hence, the H.C.F. of 112 and 160 is 16. **Ans.**

(p)

3	81, 27, 18
3	27, 9, 6
	9, 3, 2

All common prime factors of all the numbers $= 3 \times 3 = 9$
Hence, the H.C.F. of 81, 27 and 18 is 9. **Ans.**

Exercise 9 C

1. (a)

5	5, 20
	1, 4

All common prime factors of both the numbers = 5
Hence, the H.C.F. of 5 and 20 is 5. **Ans.**

(b)

2	6, 12, 24
3	3, 6, 12
	1, 2, 4

All common prime factors of all the numbers = $2 \times 3 = 6$
Hence, the H.C.F. of 6, 12 and 24 is 6. **Ans.**

(c)

1	9, 16
	9, 16

All common prime factors of both the numbers = 1.
Hence, the H.C.F. of 9 and 16 is 1. **Ans.**

(d)

1	50, 77
	50, 77

All common prime factors of both the numbers = 1.
Hence, the H.C.F. of 50 and 77 is 1. **Ans.**

(e)

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

All common prime factors of both the numbers
$= 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 = 128$
Hence, the H.C.F. of 128 and 512 is 128. **Ans.**

(f)

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

All common prime factor of both the numbers
$= 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 = 128$
Hence, the H.C.F. of 128 and 256 is 128. **Ans.**

2.

2	32, 80
2	16, 40
2	8, 20
2	4, 10
	2, 5

All common prime factors of both the numbers
$= 2 \times 2 \times 2 \times 2 = 16$
Hence, the H.C.F. of 32 and 80 is 16. And yes it is a composite number. **Ans.**

3.

17	391, 527
	23, 31

All common prime factors of both the numbers = 17

Hence, 17 is the greatest number which divides both 391 and 527 exactly. **Ans.**

4.

2	16, 20, 28
2	8, 10, 14
	4, 5, 7

All common prime factors of all the numbers $= 2 \times 2 = 4$
Hence, 4 litres is the greatest capacity of the jug. **Ans.**

5.

3	36, 63
3	12, 21
	4, 7

All common prime factors of both the numbers
$= 3 \times 3 = 9$
Hence, the greatest number $= 9$. **Ans.**

6.

2	68, 116
2	34, 58
	17, 29

All common prime factors of both the numbers
$= 2 \times 2 = 4$
Hence, the greatest number which divides 68 and 116 to give $4 = 4 \times 4 = 16$ **Ans.**

7.

2	90, 108
3	45, 54
3	15, 18
	5, 6

All common prime factors of both the numbers
$= 2 \times 3 \times 3 = 18$
Hence, the H.C.F. $= 18$ which is even. **Ans.**

8.

2	112, 96
2	56, 48
2	28, 24
2	14, 12
	7, 6

All common prime factors of both the numbers
$= 2 \times 2 \times 2 \times 2 = 16$
Hence, 16 children in each them. **Ans.**

9. The greatest length of the rod will be the H.C.F. of 36 and 15.

3	36, 15
	12, 5

All common prime factors of both the numbers $= 3$.
Hence, the length of the greatest rod to measure its length and breadth is 3 m. **Ans.**

10.

3	171, 189
3	57, 63
	19, 21

All common prime factors of both the numbers
$= 3 \times 3 = 9$
Hence, the greatest measure of tin has 9 litres. **Ans.**

10. Lowest Common Multiple

Exercise 10

1. (a)

2	36, 48
2	18, 24
3	9, 12
3	3, 4
2	1, 4
2	1, 2
	1, 1

L.C.M.
$= 2 \times 2 \times 3 \times 3 \times 2 \times 2 = 144$
Hence, the L.C.M. of 36 and 48 is 144. **Ans.**

(b)

5	45, 60
3	9, 12
3	3, 4
2	1, 4
2	1, 2
	1, 1

L.C.M.
$= 5 \times 3 \times 3 \times 2 \times 2 = 180$
Hence, the L.C.M. of 45 and 60 is 180. **Ans.**

(c)

2	8, 12, 30
2	4, 6, 15
2	2, 3, 15
3	1, 3, 15
5	1, 1, 5
	1, 1, 1

L.C.M.
$= 2 \times 2 \times 2 \times 3 \times 5 = 120$
Hence, the L.C.M. of 8, 12 and 30 is 120. **Ans.**

(d)

2	72, 84, 96
2	36, 42, 48
3	18, 21, 24
2	6, 7, 8
3	3, 7, 4
2	1, 7, 4
7	1, 7, 2
2	1, 1, 2
	1, 1, 1

L.C.M.
$= 2 \times 2 \times 3 \times 2 \times 3 \times 2 \times 7 \times 2$
$= 2016$
Hence, the L.C.M. of 72, 84 and 96 is 2016. **Ans.**

(e)

2	24, 30
3	12, 15
2	4, 5
2	2, 5
5	1, 5
	1, 1

L.C.M.
$= 2 \times 3 \times 2 \times 2 \times 5 = 120$
Hence, the L.C.M. of 24 and is 120. **Ans.**

(f)

5	75, 25, 15
5	15, 5, 3
3	3, 1, 3
	1, 1, 1

L.C.M. $= 5 \times 5 \times 3 = 75$
Hence, the L.C.M. of 75, 25 and 15 is 75. **Ans.**

(g)

19	19, 57, 95
3	1, 3, 5
5	1, 1, 5
	1, 1, 1

L.C.M. $= 19 \times 3 \times 5 = 285$
Hence, the L.C.M. of 19, 57 and 95 is 285. **Ans.**

(h)

2	4, 20, 30
2	2, 10, 15
5	1, 5, 15
3	1, 1, 3
	1, 1, 1

L.C.M. $= 2 \times 2 \times 5 \times 3 = 60$
Hence, the L.C.M. of 4, 20 and 30 is 60. **Ans.**

(i)

3	42, 105, 21
7	14, 35, 7
2	2, 5, 1
5	1, 5, 1
	1, 1, 1

L.C.M. $= 3 \times 7 \times 2 \times 5 = 210$
Hence, the L.C.M. of 42, 105 and 21 is 210. **Ans.**

2. (a)

2	4
2	2
	1

2	12
2	6
3	3
	1

2	18
3	9
3	3
	1

All factors of $4 = 2 \times 2$, $12 = 2 \times 2 \times 3$ and $18 = 2 \times 3 \times 3$
L.C.M. $= 2 \times 2 \times 3 \times 3 = 36$
Hence, the L.C.M. of 4, 12 and 18 is 36. **Ans.**

(b)

2	18
3	9
3	3
	1

2	48
2	24
2	12
2	6
3	3
	1

2	96
2	48
2	24
2	12
2	6
3	3
	1

All factors of $18 = 2 \times 3 \times 3$, $48 = 2 \times 2 \times 2 \times 2 \times 3$
and $96 = 2 \times 2 \times 2 \times 2 \times 2 \times 3$
L.C.M. $= 2 \times 3 \times 3 \times 2 \times 2 \times 2 \times 2 = 288$
Hence, the L.C.M. of 18, 48 and 96 is 288. **Ans.**

(c)

2	24
2	12
2	6
3	3
	1

2	36
2	18
3	9
3	3
	1

2	60
2	30
3	15
5	5
	1

All factors of $24 = 2 \times 2 \times 2 \times 3$, $36 = 2 \times 2 \times 3 \times 3$
and $60 = 2 \times 2 \times 3 \times 5$
L.C.M. $= 2 \times 2 \times 3 \times 3 \times 2 \times 5 = 360$
Hence, the L.C.M. of 24, 36 and 60 is 360. **Ans.**

(d)

2	40
2	20
2	10
5	5
	1

2	60
2	30
3	15
5	5
	1

2	80
2	40
2	20
2	10
5	5
	1

All factors of $40 = 2 \times 2 \times 2 \times 5$, $60 = 2 \times 2 \times 3 \times 5$
and $80 = 2 \times 2 \times 2 \times 2 \times 5$
L.C.M. $= 2 \times 2 \times 2 \times 5 \times 2 \times 3 = 240$
Hence, the L.C.M. of 40, 60 and 80 is 240. **Ans.**

(e)

2	120
2	60
2	30
5	15
3	3
	1

2	140
2	70
5	35
7	7
	1

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

All factors of $120 = 2 \times 2 \times 2 \times 5 \times 3$, $140 = 2 \times 2 \times 5 \times 7$
and $160 = 2 \times 2 \times 2 \times 2 \times 2 \times 5$

L.C.M. $= 2 \times 2 \times 2 \times 5 \times 2 \times 2 \times 7 \times 3 = 3360$
Hence, the L.C.M. of 120, 140 and 160 is 3360. **Ans.**

(f)

5	45
3	9
3	3
	1

5	125
5	25
5	5
	1

2	250
5	125
5	25
5	5
	1

All factors of $45 = 5 \times 3 \times 3$, $125 = 5 \times 5 \times 5$ and $250 = 5 \times 5 \times 5 \times 2$
L.C.M. $= 5 \times 5 \times 5 \times 3 \times 3 \times 2 = 2250$
Hence, the L.C.M. of 45, 125 and 250 is 2250. **Ans.**

(g)

5	25
5	5
	1

5	75
5	15
3	3
	1

2	50
5	25
5	5
	1

All factors of $25 = 5 \times 5$, and $75 = 5 \times 5 \times 3$ and $50 = 5 \times 5 \times 2$
L.C.M. $= 5 \times 5 \times 3 \times 2 = 150$
Hence, the L.C.M. of 25, 75 and 50 is 150. **Ans.**

(h)

3	15
5	5
	1

2	20
2	10
5	5
	1

3	45
3	15
5	5
	1

All factors of $15 = 3 \times 5$, $20 = 2 \times 2 \times 5$ and $45 = 3 \times 3 \times 5$
L.C.M. $= 3 \times 3 \times 2 \times 2 \times 5 = 180$
Hence, the L.C.M. of 15, 20 and 45 is 180. **Ans.**

(i)

2	50
5	25
5	5
	1

5	75
5	15
3	3
	1

2	100
2	50
5	25
5	5
	1

All factors of $50 = 2 \times 5 \times 5$, $75 = 3 \times 5 \times 5$ and $100 = 2 \times 2 \times 5 \times 5$
L.C.M. $= 5 \times 5 \times 2 \times 2 \times 3 = 300$
Hence, the L.C.M. of 50, 75 and 100 is 300. **Ans.**

(j)

5	75
5	15
3	3
	1

2	120
2	60
2	30
5	15
3	3
	1

2	370
5	185
37	37
	1

All factors of $75 = 5 \times 5 \times 3, 120 = 2 \times 2 \times 2 \times 5 \times 3$
and $370 = 2 \times 5 \times 37$
L.C.M. $= 5 \times 2 \times 3 \times 2 \times 2 \times 5 \times 37 = 22200$
Hence, the L.C.M. of 75, 120 and 370 is 22200. **Ans.**

(k)

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

2	120
2	60
2	30
3	15
5	5
	1

2	360
2	180
2	90
3	45
3	15
5	5
	1

All factors of $240 = 2 \times 2 \times 2 \times 2 \times 3 \times 5, 120 = 2 \times 2 \times 2 \times 3 \times 5$
and $360 = 2 \times 2 \times 2 \times 3 \times 3 \times 5$
L.C.M. $= 2 \times 2 \times 2 \times 3 \times 5 \times 5 = 720$
Hence, the L.C.M. of 240, 120 and 360 is 720. **Ans.**

(l)

3	21
7	7
	1

3	27
3	9
3	3
	1

3	81
3	27
3	9
3	3
	1

All factors of $21 = 3 \times 7, 27 = 3 \times 3 \times 3$ and $81 = 3 \times 3 \times 3 \times 3$
L.C.M. $= 3 \times 3 \times 3 \times 3 \times 7 = 567$
Hence, the L.C.M. of 21, 27 and 81 is 567. **Ans.**

3. (a)

2	4, 8, 12, 18
2	2, 4, 6, 9
2	1, 2, 3, 9
3	1, 1, 3, 9
3	1, 1, 1, 3
	1, 1, 1, 1

L.C.M. $= 2 \times 2 \times 2 \times 3 \times 3 = 72$
Hence, the L.C.M. of 4, 8, 12 and 18 is 72. **Ans.**

(b)

5	65, 75, 125
5	13, 15, 25
3	13, 3, 5
5	13, 1, 5
13	13, 1, 1
	1, 1, 1

L.C.M.
$= 5 \times 5 \times 3 \times 5 \times 13 = 4875$
Hence, the L.C.M. of 65, 75 and 125 is 4875. **Ans.**

(c)

2	8, 10, 12, 16
2	4, 5, 6, 8
2	2, 5, 3, 4
3	1, 5, 3, 2
5	1, 5, 1, 2
2	1, 1, 1, 2
	1, 1, 1, 1

L.C.M.
$= 2 \times 2 \times 2 \times 2 \times 3 \times 5 = 240$
Hence,. the L.C.m. of 8, 10, 12 and 16 is 240. **Ans.**

(d)

2	144, 192, 240
2	72, 96, 120
2	36, 48, 60
2	18, 24, 30
2	9, 12, 15
2	3, 4, 5
2	1, 4, 5
2	1, 2, 5
5	1, 1, 5
	1, 1, 1

L.C.M.
$= 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 2 \times 2 \times 5$
$= 2880$
Hence, the L.C.M. of 144, 192 and 240 is 2880. **Ans.**

(e)

3	18, 36, 63, 81
3	6, 12, 21, 27
2	2, 4, 7, 9
2	1, 2, 7, 9
7	1, 1, 7, 9
9	1, 1, 1, 9
	1, 1, 1, 1

L.C.M.
$= 3 \times 3 \times 2 \times 2 \times 7 \times 9 = 2268$
Hence, the L.C.M. of 18, 36, 63 and 81 is 2268. **Ans.**

(f)

13	52, 78, 91, 117
2	4, 6, 7, 9
2	2, 3, 7, 9
3	1, 3, 7, 9
3	1, 1, 7, 3
7	1, 1, 7, 1
	1, 1, 1, 1

L.C.M.
$= 13 \times 2 \times 2 \times 3 \times 3 \times 7 = 3276$
Hence, the L.C.M. of 52, 78, 91 and 117 is 3276. **Ans.**

(g)

7	14, 21, 35, 48
2	2, 3, 5, 48
3	1, 3, 5, 24
5	1, 1, 5, 8
2	1, 1, 1, 8
2	1, 1, 1, 4
2	1, 1, 1, 2
	1, 1, 1, 1

L.C.M.
$= 7 \times 2 \times 3 \times 5 \times 2 \times 2 \times 2$
$= 1680$
Hence, the L.C.M. of 14, 21, 35 and 48 is 1680. **Ans.**

(h)

3	45, 60, 75, 90
5	15, 20, 25, 30
3	3, 4, 5, 6
2	1, 4, 5, 2
2	1, 2, 5, 1
5	1, 1, 5, 1
	1, 1, 1, 1

L.C.M.
$= 3 \times 5 \times 3 \times 2 \times 2 \times 5 = 900$
Hence, the L.C.M. of 45, 60, 75 and 90 is 900. **Ans.**

(i)

2	54, 90, 144, 160
3	27, 45, 72, 80
3	9, 15, 24, 80
2	3, 5, 8, 80
2	3, 5, 4, 40
2	3, 5, 2, 20
2	3, 5, 1, 10
5	3, 5, 1, 5
3	3, 1, 1, 1
	1, 1, 1, 1

L.C.M.
$= 2 \times 3 \times 3 \times 2 \times 2 \times 2 \times 2 \times 5 \times 3$
$= 4320$
Hence, the L.C.M. of 54, 90, 144 and 160 is 4320**Ans.**

4. Product of two numbers
$= 48$
H.C.F. $= 2$
$\therefore$ L.C.M.
$= \dfrac{\text{Product of two numbers}}{\text{H.C.F.}}$
$= \dfrac{48}{2} = 24$
Hence, the L.C.M. is 24.

5. Product of two numbers
$= 108$
L.C.M. $= 18$
$\therefore$ H.C.F.
$= \dfrac{\text{Product of two numbers}}{\text{H.C.F.}}$
$= \dfrac{108}{18} = 6$
Hence, the H.C.F. is 6. **Ans.**

6. Product of two numbers
$= 216$
L.C.M. $= 36$
$\therefore$ H.C.F.
$= \dfrac{\text{Product of two numbers}}{\text{H.C.F.}}$
$= \dfrac{216}{36} = 6$
Hence, the L.C.M. is 6. **Ans.**

7. H.C.F. of two numbers $= 12$
L.C.M. of two numbers $= 24$
One of the number $= 12$
The other number
$= \dfrac{\text{H.C.F.} \times \text{L.C.M.}}{\text{One number}}$
$= \dfrac{12 \times 24}{12} = 24$
Hence, the other number is 24. **Ans.**

8. H.C.F. of two numbers $= 9$
L.C.M. of two numbers $= 108$
One of the number $= 27$
The other number
$= \dfrac{\text{H.C.F.} \times \text{L.C.M.}}{\text{One number}}$
$= \dfrac{9 \times 108}{27} = 36$
Hence, the other number is 36. **Ans.**

9.

2	8, 12
2	4, 6
2	2, 3
3	1, 3
	1, 1

L.C.M. $= 2 \times 2 \times 2 \times 3 = 24$
Hence, the required number is 24. **Ans**

10.

5	15, 20
2	3, 4
2	3, 2
3	3, 1
	1, 1

L.C.M. $= 5 \times 2 \times 2 \times 3 = 60$
The smallest number
$= 60 + 5 = 65$
Hence, the required number is 65. **Ans.**

11.

3	3, 4, 5
4	1, 4, 5
5	1, 1, 5
	1, 1, 1

L.C.M. $= 3 \times 4 \times 5 = 60$
Hence, after 60 hours then will ring together. **Ans.**

12.

2	4, 5, 6
2	2, 5, 3
3	1, 5, 3
5	1, 5, 1
	1, 1, 1

L.C.M. $= 2 \times 2 \times 3 \times 5 = 60$
Hence, least number of oranges $= 60 + 2 = 62$ **Ans.**

13.

2	6, 8, 18
3	3, 4, 9
3	1, 4, 3
2	1, 4, 1
2	1, 2, 1
	1, 1, 1

L.C.M. $= 2 \times 3 \times 3 \times 2 \times 2 = 72$
Hence, the least number $= 72 + 2 = 74$ **Ans.**

14.

2	57, 76, 190
19	57, 38, 95
2	3, 2, 5
3	3, 1, 5
5	1, 1, 5
	1, 1, 1

L.C.M.
$= 2 \times 19 \times 2 \times 3 \times 5 = 1140$
Hence, the smallest number
$= 1140 - 10 = 1130$ **Ans.**

15.

2	2, 3, 4
2	1, 3, 2
3	1, 3, 1
	1, 1, 1

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

Hence, the least number of
toffees $= 12 + 1 = 13$ **Ans.**

16.

2	12, 14, 18, 21
3	6, 7, 9, 21
2	2, 7, 3, 7
3	1, 7, 3, 7
7	1, 7, 1, 7
	1, 1, 1, 1

L.C.M.
$= 2 \times 3 \times 2 \times 3 \times 7 = 252$
Hence, the lowest number
$= 252 - 5 = 247$ **Ans.**

17.

5	15, 20, 30
3	3, 4, 6
2	1, 4, 2
2	1, 2, 1
	1, 1, 1

L.C.M. $= 5 \times 3 \times 2 \times 2 = 60$
$\therefore$ Time $= 60$ min $= 1$ hour
Hence, at $(11 + 1)$ o'clock
$= 12$ o'clock they will ring
together again. **Ans.**

18.

5	20, 35, 45
2	4, 7, 9
2	2, 7, 9
7	1, 7, 9
3	1, 1, 9
3	1, 1, 3
	1, 1, 1

L.C.M. $= 5 \times 2 \times 2 \times 7 \times 3 \times 3$
$= 1260$
Hence, the least number of
bananas $= 1260$ **Ans.**

11. Fractional Numbers

Exercise 11 A

1. (a) $\frac{5}{8}, \frac{20}{32}$, (c) $\frac{2}{3}, \frac{10}{15}$ (d) $\frac{7}{9}, \frac{35}{45}$

2. (a) $\frac{5}{6}, \frac{10}{12}, \frac{15}{18}, \frac{20}{24}, \frac{25}{30}, \frac{30}{36}, \frac{35}{42}, \frac{40}{48}$ (b) $\frac{2}{3}, \frac{4}{6}, \frac{6}{9}, \frac{8}{12}, \frac{10}{15}, \frac{12}{18}, \frac{14}{21}, \frac{16}{24}$

(c) $\frac{6}{7}, \frac{12}{14}, \frac{18}{21}, \frac{24}{28}, \frac{30}{35}, \frac{36}{42}, \frac{42}{49}, \frac{48}{56}$

3. (a) Here the denominator are 3 are 48.
So, multiply the numerator 1 by 16. $16 \times 1 = 16$

$\therefore \quad \frac{1}{3} = \frac{16}{48}$ **Ans.**

(b) Here the numerator are 4 and 60.
So, multiply the denominator 5 by 15.
$5 \times 15 = 75$

$\therefore \quad \frac{4}{5} = \frac{60}{75}$ **Ans.**

(c) Here the denominator are 18 and 144.
So, multiply the numerator 13 by 8. $13 \times 8 = 104$

$\therefore \quad \frac{13}{18} = \frac{104}{144}$ **Ans.**

(d) Here the denominator are 21 and 105.
So, divided the numerator 25 by 5.

$25 \div 5 = 5$

$\therefore \quad \frac{5}{21} = \frac{25}{105}$ **Ans.**

(e) Here the denominator are 3 and 9.
So, mutliply the numerator 2 by 3. $2 \times 3 = 6$

$\therefore \quad \frac{2}{3} = \frac{6}{9}$

Now, $\frac{6}{9} = \frac{\square}{18}$ **Ans.**

Here the denominator are 9 and 18.
So, multiply the numerator 6 by 2. $6 \times 2 = 12$

$\therefore \quad \frac{6}{9} = \frac{12}{18}$

Here the numerator are 2 and 18.
So, multiply the denominator 3 by 9.

$3 \times 9 = 27$

$\therefore \quad \frac{12}{18} = \frac{18}{27}$

Now, $\frac{18}{27} = \frac{}{30}$ or $\frac{2}{3} = \frac{}{30}$

Here the denominator are 3 and 30.
So, multiply the numerator 2 by 10. $2 \times 10 = 20$

$\therefore \quad \frac{18}{27} = \frac{20}{30}$

Hence,

$\left[\frac{2}{3}=\frac{6}{9}=\frac{12}{18}=\frac{18}{27}=\frac{20}{30}\right]$ **Ans.**

4. (a) Divide 30 by 5

$=30\div5=6;\ \frac{5\times6}{6\times6}=\frac{30}{36}$

Hence, the equivalent fraction $=\frac{30}{36}$ **Ans.**

(b) Divide 30 by

$2=30\div2=15;\ \frac{2\times15}{3\times15}=\frac{30}{45}$

Hence, the equivalent fraction is $\frac{30}{45}$. **Ans.**

(c) $\frac{50}{60}=\frac{5}{6}$

Divide 30 by $5=6$;

$\frac{5\times6}{6\times6}=\frac{30}{36}$

Hence, the equivalent fraction is $\frac{30}{36}$. **Ans.**

(d) $\frac{40}{44}=\frac{10}{11}$

Divide 30 by $10=3$;

$\frac{10\times3}{11\times3}=\frac{30}{33}$

Hence, the equivalent fraction is $\frac{30}{33}$. **Ans.**

5. (a) Divide 30 by $6=5$;

$\frac{5\times5}{6\times5}=\frac{25}{30}$

Hence, the equivalent fraction is $\frac{25}{30}$. **Ans.**

(b) Divide 30 by $3=10$;

$\frac{2\times10}{3\times10}=\frac{20}{30}$

Hence, the equivalent fraction is $\frac{20}{30}$. **Ans.**

(c) $\frac{25}{50}=\frac{1}{2}$

Divide 30 by $2=15$;

$\frac{1\times15}{2\times15}=\frac{15}{30}$

Hence, the equivalent fraction is $\frac{15}{30}$. **Ans.**

(d) $\frac{50}{60}=\frac{5}{6}$

Divide 30 by $6=5$;

$\frac{5\times5}{6\times5}=\frac{25}{30}$

Hence, the equivalent fraction is $\frac{25}{30}$. **Ans.**

6. (a) The H.C.F. of 4 and

$20=4$

Divide 4 and 20 by 4;

$\frac{4\div4}{20\div4}=\frac{1}{5}$

In its lowest terms, $\frac{4}{20}=\frac{1}{5}$. **Ans.**

(b) The H.C.H. of 3 and

$15=3$

Divide 3 and 15 by 3;

$\frac{3\div3}{15\div3}=\frac{1}{5}$

In its lowest terms, $\frac{3}{15}=\frac{1}{5}$.

Ans.

(c) The H.C.F. of 34 and $36 = 2$

Divide 34 and 36 by 2;

$$\frac{34 \div 2}{36 \div 2} = \frac{17}{18}$$

In its lowest terms, $\frac{34}{36} = \frac{17}{18}$

Ans.

(d) The H.C.F. of 8 and $12 = 4$

Divide 8 and 12 by 4;

$$\frac{8 \div 4}{12 \div 4} = \frac{2}{3}$$

In its lowest terms, $\frac{8}{12} = \frac{2}{3}$

Ans.

Exercise 11 B

1. (a) $\frac{3}{9}$, (b) $\frac{1}{6}$, (e) $\frac{1}{4}$,
(f) $\frac{3}{7}$, (g) $\frac{2}{5}$, (h) $\frac{5}{8}$

2. $\frac{7}{5}, \frac{9}{6}$

3. (a) $\frac{7}{8}$, (b) $\frac{12}{17}$, (e) $\frac{2}{7}$,
(h) $\frac{1}{10}$, (i) $\frac{4}{5}$, (j) $\frac{2}{5}$

4. (a) $\frac{16}{15}$, (b) $\frac{12}{11}$, (i) $\frac{19}{18}$

5. (a) divide 50 by 7.

$$\begin{array}{r} 7 \\ 7\overline{)\,5\,0} \\ -4\,9 \\ \hline 1 \end{array}$$

Quotient
$= 7$ Divisor
$= 7$ Remainder $= 1$

It means $\frac{50}{7} = 7 + \frac{1}{7} = 7\frac{1}{7}$

Hence, mixed number $= 7\frac{1}{7}$.

Ans.

(b) Divide 81 by 10.

$$\begin{array}{r} 8 \\ 10\overline{)\,8\,1} \\ -8\,0 \\ \hline 1 \end{array}$$

Quotient
$= 8$ Divisor
$= 10$ Remainder $= 1$

In means, $\frac{81}{10} = 8 + \frac{1}{10} = 8\frac{1}{10}$

Hence, mixed number is $8\frac{1}{10}$.

Ans.

(c) Divide 71 by 14.

$$\begin{array}{r} 5 \\ 14\overline{)\,7\,1} \\ -7\,0 \\ \hline 1 \end{array}$$

Quotient
$= 5$ Divisor
$= 14$ Remainder $= 1$

In means, $\frac{71}{14} = 5 + \frac{1}{14} = 5\frac{1}{14}$

Hence, mixed number is $5\frac{1}{14}$.

Ans.

(d) Divide 92 by 9.

$$\begin{array}{r} 10 \\ 9\overline{)\,9\,2} \\ -9\,0 \\ \hline 2 \end{array}$$

Quotient
$= 10$ Divisor $= 9$
Remainder $= 2$
It means, $\frac{92}{9} = 10 + \frac{2}{9} = 10\frac{2}{9}$
Hence, mixed number is
$10\frac{2}{9}$. **Ans.**

(e) Divide 17 by 2.

$$2\overline{)17}\ 8,\ -16,\ 1$$

Quotient
$= 8$ Divisor
$= 2$ Remainder $= 1$
It means, $\frac{17}{2} = 8 + \frac{1}{2} = 8\frac{1}{2}$
Hence, mixed number is $8\frac{1}{2}$.
Ans.

(f) Divide 15 by 4.

$$4\overline{)15}\ 3,\ -12,\ 3$$

Quotient
$= 3$ Divisor
$= 4$ Remainder $= 3$
$\therefore \frac{15}{4} = 3 + \frac{3}{4} = 3\frac{3}{4}$
Hence, mixed number is $3\frac{3}{4}$.
Ans.

(g) Divide 25 by 3.

$$3\overline{)25}\ 8,\ -24,\ 1$$

Quotient
$= 8$ Divisor
$= 3$ Remainder $= 1$
$\therefore \frac{25}{3} = 8 + \frac{1}{3} = 8\frac{1}{3}$
Hence, mixed number is $8\frac{1}{3}$.
Ans.

(h) Divide 31 by 6.

$$6\overline{)31}\ 5,\ -30,\ 1$$

Quotient
$= 5$ Divisor
$= 6$ Remainder $= 1$
$\therefore \frac{31}{6} = 5 + \frac{1}{6} = 5\frac{1}{6}$
Hence, mixed number is $5\frac{1}{6}$.
Ans.

6. (a) $2\frac{1}{2} = 2 + \frac{1}{2} = 2 \times \frac{2}{2} + \frac{1}{2}$
$= \frac{4}{2} + \frac{1}{2} = \frac{4+1}{2} = \frac{5}{2}$
Hence, $\left[2\frac{1}{2} = \frac{5}{2}\right]$ **Ans.**

(b) $6\frac{1}{9} = 6 + \frac{1}{9} = 6 \times \frac{9}{9} + \frac{1}{9}$
$= \frac{54}{9} + \frac{1}{9} = \frac{54+1}{9} = \frac{55}{9}$

Hence, $\left[6\frac{1}{9}=\frac{55}{9}\right]$ **Ans.**

(c) $9\frac{1}{11}=9+\frac{1}{11}$

$=9\times\frac{11}{11}+\frac{1}{11}=\frac{99}{11}+\frac{1}{11}$

$=\frac{99+1}{11}=\frac{100}{11}$

Hence, $\left[9\frac{1}{11}=\frac{100}{11}\right]$ **Ans.**

(d) $15\frac{3}{7}=\frac{(15\times7)+3}{7}$

$=\frac{105+3}{7}=\frac{108}{7}$

Hence, $\left[15\frac{3}{7}=\frac{108}{7}\right]$ **Ans.**

(e) $20\frac{1}{13}=\frac{(20\times13)+1}{13}$

$=\frac{260+1}{13}=\frac{261}{13}$

Hence, $\left[20\frac{1}{13}=\frac{261}{13}\right]$ **Ans.**

(f) $7\frac{9}{11}=\frac{(7\times11)+9}{11}$

$=\frac{77+9}{11}=\frac{86}{11}$

Hence, $\left[7\frac{9}{11}=\frac{86}{11}\right]$ **Ans.**

(g) $10\frac{1}{12}=\frac{(10\times12)+1}{12}$

$=\frac{120+1}{12}=\frac{121}{12}$

Hence, $\left[10\frac{1}{12}=\frac{121}{12}\right]$ **Ans.**

(h) $12\frac{3}{7}=\frac{(12\times7)+3}{7}$

$=\frac{84+3}{7}=\frac{87}{7}$

Hence, $\left[12\frac{3}{7}=\frac{87}{7}\right]$ **Ans.**

Exercise 11 C

1. (a) $35\div9$

$$\begin{array}{r} 3 \\ 9\overline{)\,35} \\ -27 \\ \hline 8 \end{array}$$

Quotient $=3$

Divisor $=9$

Remainder $=8$

$\therefore\frac{35}{9}=3+\frac{8}{9}=3\frac{8}{9}$

Hence, $\left[35\div9=3\frac{8}{9}\right]$ **Ans.**

(b) $39\div10$

$$\begin{array}{r} 3 \\ 10\overline{)\,39} \\ -30 \\ \hline 9 \end{array}$$

Quotient $=3$

Divisor $=10$

Remainder $=9$

$\therefore\frac{39}{10}=3+\frac{9}{10}=3\frac{9}{10}$

Hence, $\left[39\div10=3\frac{9}{10}\right]$ **Ans.**

(c) $31\div8$

$$\begin{array}{r} 3 \\ 8\overline{)\,31} \\ -24 \\ \hline 7 \end{array}$$

Quotient $=3$

Divisor = 8
Remainder = 7
$\therefore \frac{31}{8} = 3 + \frac{7}{8} = 3\frac{7}{8}$
Hence, $\left[31 \div 8 = 3\frac{7}{8}\right]$ **Ans.**

(d) $53 \div 10$

$$\begin{array}{r} 5 \\ 10\overline{)\,5\,3} \\ -5\,0 \\ \hline 3 \end{array}$$

Quotient = 5
Divisor = 10
Remainder = 3
$\therefore \frac{53}{10} = 5 + \frac{3}{10} = 5\frac{3}{10}$
Hence, $\left[53 \div 10 = 5\frac{3}{10}\right]$ **Ans.**

(e) $31 \div 5$

$$\begin{array}{r} 6 \\ 5\overline{)\,3\,1} \\ -3\,0 \\ \hline 1 \end{array}$$

Quotient = 6
Divisor = 5
Remainder = 1
$\therefore \frac{31}{5} = 6 + \frac{1}{5} = 6\frac{1}{5}$
Hence, $\left[31 \div 5 = 6\frac{1}{5}\right]$ **Ans.**

(f) $43 \div 4$

$$\begin{array}{r} 10 \\ 4\overline{)\,4\,3} \\ -4\,0 \\ \hline 3 \end{array}$$

Quotient = 10
Divisor = 4
Remainder = 3
$\therefore \frac{43}{4} = 10 + \frac{3}{4} = 10\frac{3}{4}$
Hence, $\left[43 \div 4 = 10\frac{3}{4}\right]$ **Ans.**

(g) $13 \div 6$

$$\begin{array}{r} 2 \\ 6\overline{)\,1\,3} \\ -1\,2 \\ \hline 1 \end{array}$$

Quotient = 2
Divisor = 6
Remainder = 1
$\therefore \frac{13}{6} = 2 + \frac{1}{6} = 2\frac{1}{6}$
Hence, $\left[13 \div 6 = 2\frac{1}{6}\right]$ **Ans.**

(h) $76 \div 9$

$$\begin{array}{r} 8 \\ 9\overline{)\,7\,6} \\ -7\,2 \\ \hline 4 \end{array}$$

Quotient = 8
Divisor = 9
Remainder = 4 $\therefore$
$\frac{76}{9} = 8 + \frac{4}{9} = 8\frac{4}{9}$
Hence, $\left[76 \div 9 = 8\frac{4}{9}\right]$ **Ans.**

(i) $52 \div 7$

$$\begin{array}{r} 7 \\ 7\overline{)\,5\,2} \\ -4\,9 \\ \hline 3 \end{array}$$

Quotient = 7

Divisor = 7
Remainder = 3
$\therefore \frac{52}{7} = 7 + \frac{3}{7} = 7\frac{3}{7}$
Hence, $\left[52 \div 7 = 7\frac{3}{7}\right]$ **Ans.**

(j) $58 \div 9$

$$\begin{array}{r} 6 \\ 9\overline{)\,5\,8} \\ -5\,4 \\ \hline 4 \end{array}$$

Quotient = 6
Divisor = 9
Remainder = 4
$\therefore \frac{58}{9} = 6 + \frac{4}{9} = 6\frac{4}{9}$
Hence, $\left[58 \div 9 = 6\frac{4}{9}\right]$ **Ans.**

(k) $37 \div 12$

$$\begin{array}{r} 3 \\ 12\overline{)\,3\,7} \\ -3\,6 \\ \hline 1 \end{array}$$

Quotient = 3
Divisor = 12
Remainder = 1
$\therefore \frac{37}{12} = 3 + \frac{1}{12} = 3\frac{1}{12}$
Hence, $\left[37 \div 12 = 3\frac{1}{12}\right]$ **Ans.**

(l) $45 \div 8$

$$\begin{array}{r} 5 \\ 8\overline{)\,4\,5} \\ -4\,0 \\ \hline 5 \end{array}$$

Quotient = 5
Divisor = 8
Remainder = 5
$\therefore \frac{45}{8} = 5 + \frac{5}{8} = 5\frac{5}{8}$
Hence, $\left[45 \div 8 = 5\frac{5}{8}\right]$ **Ans.**

2. (a) $100 \div 50 = \frac{100}{50} = \frac{10}{5} = 2$
Hence, $[100 \div 50 = 2]$ **Ans.**

(b) $120 \div 15 = \frac{120}{15} = \frac{24}{3} = 8$
Hence, $[120 \div 15 = 8]$ **Ans.**

(c) $72 \div 42 = \frac{72}{42} = \frac{36}{21} = \frac{12}{7}$
Hence, $\left[72 \div 42 = \frac{12}{7}\right]$ **Ans.**

(d) $100 \div 19 = \frac{100}{19} = 5\frac{5}{19}$

$$\begin{array}{r} 5 \\ 19\overline{)\,1\,0\,0} \\ -9\,5 \\ \hline 5 \end{array}$$

Hence, $\left[100 \div 19 = 5\frac{5}{19}\right]$ **Ans.**

(e) $\frac{18}{10} = \frac{9}{5} = 1\frac{4}{5}$

$$\begin{array}{r} 1 \\ 5\overline{)\,9} \\ -5 \\ \hline 4 \end{array}$$

Hence, $\left[18 \div 10 = 1\frac{4}{5}\right]$ **Ans.**

(f) $\frac{25}{15} = \frac{5}{3} = 1\frac{2}{3}$

$$3\overline{)\,5}\;1$$
$$-3$$
$$2$$

Hence, $\left[25 \div 15 = 1\frac{2}{3}\right]$ **Ans.**

(g) $\frac{24}{20} = \frac{12}{10} = \frac{6}{5} = 1\frac{1}{5}$

$$5\overline{)\,6}\;1$$
$$-5$$
$$1$$

Hence, $\left[24 \div 20 = 1\frac{1}{5}\right]$ **Ans.**

(h) $\frac{42}{36} = \frac{21}{18} = \frac{7}{6} = 1\frac{1}{6}$

$$6\overline{)\,7}\;1$$
$$-6$$
$$1$$

Hence, $\left[42 \div 36 = 1\frac{1}{6}\right]$ **Ans.**

(i) $\frac{13}{5} = 2\frac{3}{5}$

$$5\overline{)\,13}\;2$$
$$-10$$
$$3$$

Hence, $\left[13 \div 5 = 2\frac{3}{5}\right]$ **Ans.**

(j) $\frac{15}{12} = \frac{5}{4} = 1\frac{1}{4}$

$$4\overline{)\,5}\;1$$
$$-4$$
$$1$$

Hence, $\left[15 \div 12 = 1\frac{1}{4}\right]$ **Ans.**

(k) $\frac{26}{16} = \frac{13}{8} = 1\frac{5}{8}$

$$8\overline{)\,13}\;1$$
$$-8$$
$$5$$

Hence, $\left[26 \div 16 = 1\frac{5}{8}\right]$ **Ans.**

(l)

$84 \div 40 = \frac{84}{40} = \frac{42}{20} = \frac{21}{10} = 2\frac{1}{10}$

$$10\overline{)\,21}\;2$$
$$-20$$
$$1$$

Hence, $\left[84 \div 40 = 2\frac{1}{10}\right]$ **Ans.**

3. (a) $\frac{58}{6} = \frac{29}{3} = 9\frac{2}{3}$

$$3\overline{)\,29}\;9$$
$$-27$$
$$2$$

Hence, $\left[58 \div 6 = 29 \div 3 = 9\frac{2}{3}\right]$ **Ans.**

(b) $\frac{16}{10} = \frac{8}{5} = 1\frac{3}{5}$

$$5\overline{)\,8\,}\;1$$
$$-5$$
$$3$$

Hence, $\left[\frac{16}{10}=1\frac{3}{5}\right]$ **Ans.**

(c) $\frac{150}{20}=\frac{15}{2}=7\frac{1}{2}$

$$2\overline{)\,1\,5\,}\;7$$
$$-1\,4$$
$$1$$

Hence, $\left[150\div 20=7\frac{1}{2}\right]$ **Ans.**

(d) $\frac{51}{7}=7\frac{2}{7}$

$$7\overline{)\,5\,1\,}\;7$$
$$-4\,9$$
$$2$$

Hence, $\left[51\div 7=7\frac{2}{7}\right]$ **Ans.**

(e) $\frac{20}{16}=\frac{10}{8}=\frac{5}{4}=1\frac{1}{4}$

$$4\overline{)\,5\,}\;1$$
$$-4$$
$$1$$

Hence, $\left[20\div 16=1\frac{1}{4}\right]$ **Ans.**

(f) $\frac{25}{10}=\frac{5}{2}=2\frac{1}{2}$

$$2\overline{)\,5\,}\;2$$
$$-4$$
$$1$$

Hence, $\left[25\div 10=2\frac{1}{2}\right]$ **Ans.**

(g) $\frac{48}{9}=\frac{16}{3}=5\frac{1}{3}$

$$3\overline{)\,1\,6\,}\;5$$
$$-1\,5$$
$$1$$

Hence, $\left[48\div 9=5\frac{1}{3}\right]$ **Ans.**

(h) $\frac{135}{10}=\frac{27}{2}=13\frac{1}{2}$

$$2\overline{)\,2\,7\,}\;13$$
$$-2$$
$$0\,7$$
$$6$$
$$1$$

Hence, $\left[135\div 10=13\frac{1}{2}\right]$ **Ans.**

(i) $\frac{126}{4}=\frac{63}{2}=31\frac{1}{2}$

$$2\overline{)\,6\,3\,}\;31$$
$$-6$$
$$3$$
$$-2$$
$$1$$

Hence, $\left[126\div 4=31\frac{1}{2}\right]$ **Ans.**

(j) $\frac{83}{5} = 16\frac{3}{5}$

$$\begin{array}{r} 16 \\ 5\overline{)\,83} \\ -5 \\ \hline 33 \\ -30 \\ \hline 3 \end{array}$$

Hence, $\left[83 \div 5 = 16\frac{3}{5}\right]$ **Ans.**

(k) $\frac{36}{8} = \frac{18}{4} = \frac{9}{2} = 4\frac{1}{2}$

$$\begin{array}{r} 4 \\ 2\overline{)\,9} \\ -8 \\ \hline 1 \end{array}$$

Hence, $\left[36 \div 8 = 4\frac{1}{2}\right]$ **Ans.**

(l) $\frac{144}{15} = \frac{48}{5} = 9\frac{3}{5}$

$$\begin{array}{r} 9 \\ 5\overline{)\,48} \\ -45 \\ \hline 3 \end{array}$$

Hence, $\left[144 \div 15 = 9\frac{3}{5}\right]$ **Ans.**

Exercise 11 D

1. (a) $\frac{8}{17} \times \frac{8}{20}$

$8 \times 20 = 160$ and $18 \times 17 = 136$,

$\therefore 160 > 136$

$\therefore \frac{8}{17} > \frac{8}{20}$

Hence, $\frac{8}{17}$ is greater fraction. **Ans.**

(b) $\frac{3}{5} \times \frac{7}{10}$

$3 \times 10 = 30$ and $7 \times 5 = 35$,

$\therefore 30 < 35$

$\therefore \frac{3}{5} < \frac{7}{10}$ or $\frac{7}{10} > \frac{3}{5}$

Hence, $\frac{7}{10}$ is greater fraction. **Ans.**

(c) $\frac{6}{10} \times \frac{7}{10}$

$6 \times 10 = 60$ and $7 \times 10 = 70$,

$60 < 70$

$\therefore \frac{6}{10} < \frac{7}{10}$ or $\frac{7}{10} > \frac{6}{10}$

Hence, $\frac{7}{10}$ is greater fraction. **Ans.**

(d) $\frac{2}{3} \times \frac{2}{7}$

$2 \times 7 = 14$ and $2 \times 3 = 6$,

$\therefore \quad 14 > 6$

$\therefore \quad \frac{2}{3} > \frac{2}{7}$

Hence, $\frac{2}{3}$ is greater fraction. **Ans.**

(e) $\frac{23}{44} \times \frac{23}{30}$

$23 \times 30 = 690$ and

$23 \times 44 = 1012, \therefore 690 < 1012$

$\therefore \frac{23}{44} < \frac{23}{30}$ or $\frac{23}{30} > \frac{23}{44}$

Hence, greater fraction is $\frac{23}{30}$. **Ans.**

(f) $\frac{5}{12} \times \frac{5}{8}$

$5 \times 8 = 40$ and $5 \times 12 = 60$,

$\therefore \quad 40 < 60$

$\therefore \frac{5}{12} < \frac{5}{8}$ or $\frac{5}{8} > \frac{5}{12}$

Hence, greater fraction is $\frac{5}{8}$.

Ans.

2. (a) $\frac{3}{4} \times \frac{5}{6}$

$3 \times 6 = 18$ and $5 \times 4 = 20$,

$\therefore \quad 18 < 20$

$\therefore \quad \frac{3}{4} < \frac{5}{6}$

Hence, smaller fraction is $\frac{3}{4}$.

Ans.

(b) $\frac{2}{7} \times \frac{5}{14}$

$2 \times 14 = 28$ and $5 \times 7 = 35$,

$\therefore \quad 28 < 35$

$\therefore \quad \frac{2}{7} < \frac{5}{14}$

Hence, smaller fraction is $\frac{2}{7}$.

Ans.

(c) $\frac{3}{4} \times \frac{14}{18}$

$3 \times 18 = 54$ and $14 \times 4 = 56$,

$\therefore \quad 54 < 56$

$\therefore \quad \frac{3}{4} < \frac{14}{18}$

Hence, smaller fraction $= \frac{3}{4}$

Ans.

(d) $\frac{9}{14} \times \frac{3}{7}$

$9 \times 7 = 63$ and $14 \times 3 = 42$,

$\therefore \quad 63 > 42$ or $42 < 63$

$\therefore \quad \frac{3}{7} < \frac{9}{14}$

Hence, smaller fraction is $\frac{3}{7}$.

Ans.

(e) $\frac{4}{9} \times \frac{5}{18}$

$4 \times 18 = 72$ and $5 \times 9 = 45$,

$\therefore \quad 45 < 72$

$\therefore \quad \frac{5}{18} < \frac{4}{9}$

Hence, smaller fraction is $\frac{5}{18}$.

Ans.

(f) $\frac{5}{12} \times \frac{3}{10}$

$5 \times 10 = 50$ and $3 \times 12 = 36$,

$\therefore 50 > 36$ or $36 < 50$

$\therefore \quad \frac{3}{10} < \frac{5}{12}$

Hence, smaller fraction is $\frac{3}{10}$

Ans.

(g) $\frac{3}{5} \times \frac{4}{10}$

$3 \times 10 = 30$ and $4 \times 5 = 20$,

$\therefore \quad 20 < 30$

$\therefore \quad \frac{4}{10} < \frac{3}{5}$

Hence, smaller fraction is $\frac{4}{10}$.

Ans.

(h) $\frac{10}{8} \times \frac{12}{6}$

$10 \times 6 = 60$ and $12 \times 8 = 96$,

$\therefore \quad 60 < 96$

$\therefore \frac{10}{8} < \frac{12}{6}$

Hence, smaller fraction is $\frac{10}{8}$

Ans.

(i) $\frac{9}{21} \times \frac{8}{14}$

$14 \times 9 = 126$ and $21 \times 8 = 168$,

$126 < 168$

$\therefore \frac{9}{21} < \frac{8}{14}$

Hence, smaller fraction is $\frac{9}{21}$.

Ans.

3. (a) $\frac{42}{5}, 8\frac{3}{5}$

$8\frac{3}{5} = \frac{(8 \times 5) + 3}{5} = \frac{40 + 3}{5} = \frac{43}{5}$

Now, compare $\frac{42}{5}$ and $\frac{43}{5}$.

Since, $42 < 43$

So, $\frac{42}{5} < \frac{43}{5}$ **Ans.**

(b) $9\frac{5}{6} = \frac{(9 \times 6) + 5}{6} = \frac{54 + 5}{6}$

$= \frac{59}{6}$

Now, compare $\frac{59}{6}$ and $\frac{89}{6}$.

Since, $59 < 89$

So, $\frac{59}{6} < \frac{89}{6}$ **Ans.**

(c) $12\frac{3}{4} = \frac{(12 \times 4) + 3}{4}$

$= \frac{48 + 3}{4} = \frac{51}{4}$

Now compare $\frac{144}{11}$ and $\frac{51}{4}$.

$\frac{144}{11} \times \frac{51}{4}$

$144 \times 4 = 576$ and

$11 \times 51 = 561, \therefore 576 > 561$

So, $\frac{144}{11} > \frac{51}{4}$ **Ans.**

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

Now compare $\frac{3}{2}$ and $\frac{2}{3}$.

$\frac{3}{2} \times \frac{2}{3}$

$3 \times 3 = 9$ and $2 \times 2 = 4, \therefore 9 > 4$

So, $\frac{3}{2} > \frac{2}{3}$ **Ans.**

(e) $3\frac{1}{3} = \frac{(3 \times 3) + 1}{3} = \frac{10}{3}$

Now compare $\frac{10}{3}$ and $\frac{5}{3}$.

Since, $10 > 5$

So, $\frac{10}{3} > \frac{5}{3}$ **Ans.**

(f) $2\frac{3}{4} = \frac{(2 \times 4) + 3}{4}$

$= \frac{8 + 3}{4} = \frac{11}{4}$

Now compare $\frac{8}{5}$ and $\frac{11}{4}$.

$\frac{8}{5} \times \frac{11}{4}$

$8 \times 4 = 32$ and $11 \times 5 = 55$,

$\therefore 32 < 55$

So, $\frac{8}{5} < \frac{11}{4}$ **Ans.**

(g) $6\frac{1}{3}=\frac{(3\times6)+1}{3}$

$=\frac{18+1}{3}=\frac{19}{3}$

Now compare $\frac{10}{3}$ and $\frac{19}{3}$.

Since, $10<19$

So, $\frac{10}{3}<\frac{19}{3}$ **Ans.**

(h) $10\frac{1}{3}=\frac{(10\times3)+1}{3}$

$=\frac{30+1}{3}=\frac{31}{3}$

Now compare $\frac{31}{3}$ and $\frac{23}{2}$.

$\frac{31}{3}\times\frac{23}{2}$

$31\times2=62$ and $23\times3=69$,

$\therefore\ 62<69$

So, $\frac{31}{3}<\frac{23}{2}$ **Ans.**

(i) $8\frac{5}{7}=\frac{(7\times8)+5}{7}$

$=\frac{56+5}{7}=\frac{61}{7}$

Now compare $\frac{61}{7}$ and $\frac{38}{4}$.

$\frac{61}{7}\times\frac{38}{4}$

$61\times4=244$ and $38\times7=266$,

$244<266$

Hence, $\frac{61}{7}<\frac{38}{4}$ **Ans.**

4. (a) $8\frac{2}{3}=\frac{24+2}{3}=\frac{26}{3}$

Now $\frac{26}{3}\times\frac{11}{2}$

$26\times2=52$ and $11\times3=33$,

$\therefore\ 52>33$

$\therefore\ 8\frac{2}{3}>\frac{11}{2}$ **Ans.**

(b) $3\frac{2}{11}<3\frac{3}{13}$ (c) $\frac{55}{23}>\frac{94}{43}$

(d) $\frac{15}{4}=3\frac{3}{4}$ (e) $9\frac{1}{8}>\frac{75}{16}$

(f) $3\frac{2}{5}>2\frac{4}{7}$ (g) $\frac{10}{13}<\frac{10}{11}$

(h) $8\frac{3}{4}>\frac{11}{3}$ (i) $2\frac{1}{3}=\frac{56}{24}$

(j) $\frac{3}{4}>\frac{2}{3}$ (k) $\frac{21}{32}>\frac{1}{2}$

(l) $\frac{31}{5}=6\frac{1}{5}$

5. (a) $\frac{93}{7}=13\frac{2}{7}$

$$\begin{array}{r} 13 \\ 7\overline{)\,93} \\ -7 \\ \hline 23 \\ -21 \\ \hline 2 \end{array}$$

$\therefore\ 13\frac{2}{7}=\frac{93}{7}$ **Ans.**

(b) $3\frac{3}{5}=\frac{(3\times5)+3}{5}$

$=\frac{15+3}{5}=\frac{18}{5}$

$\therefore\ 3\frac{3}{5}=\frac{18}{5}$ **Ans.**

(c)

$$\begin{array}{r} 14 \\ 7\overline{)\,101} \\ -7 \\ \hline 31 \\ -28 \\ \hline 3 \end{array}$$

$\therefore 14\frac{3}{7} = \frac{101}{7}$ **Ans.**

(d) $4\frac{3}{7} = \frac{(4\times 7)+3}{7} = \frac{28+3}{7}$

$\therefore 4\frac{3}{7} = \frac{31}{7}$ **Ans.**

(e) $13\frac{2}{63} = \frac{(13\times 63)+2}{63}$

$= \frac{819+2}{63} = \frac{821}{63}$

$13\frac{2}{63} = \frac{821}{63}$ **Ans.**

(f) $21\frac{1}{21} = \frac{(21\times 21)+1}{21}$

$= \frac{441+1}{21} = \frac{442}{21}$

$\therefore \quad 21\frac{1}{21} = \frac{442}{21}$ **Ans.**

(g) $\frac{82}{5} = 16\frac{2}{5}$

$$5\overline{)\,82}\;\;16$$
$$-5$$
$$32$$
$$-30$$
$$2$$

$16\frac{2}{5} = \frac{82}{5}$ **Ans.**

(h) $\frac{200}{3} = 66\frac{2}{3}$

$$3\overline{)\,200}\;\;66$$
$$-18$$
$$20$$
$$-18$$
$$2$$

$\therefore 66\frac{2}{3} = \frac{200}{3}$ **Ans.**

(i) $\frac{409}{97} = 4\frac{21}{97}$

$$97\overline{)\,409}\;\;4$$
$$-388$$
$$21$$

$\therefore 4\frac{21}{97} = \frac{409}{97}$ **Ans.**

(j) $4\frac{7}{8} = \frac{(4\times 8)+7}{8}$

$= \frac{32+7}{7} = \frac{39}{8}$

$\therefore \; 4\frac{7}{8} = \frac{39}{8}$ **Ans.**

(k) $7\frac{2}{11} = \frac{(7\times 11)+2}{11}$

$= \frac{77+2}{11} = \frac{79}{11}$

$\therefore 7\frac{2}{11} = \frac{79}{11}$ **Ans.**

(l) $\frac{23}{5} = 4\frac{3}{5}$

$$5\overline{)\,23}\;\;4$$
$$-20$$
$$3$$

$\therefore 4\frac{3}{5} = \frac{23}{5}$ **Ans.**

6. (a) L.C.M. of 3 and 7 = 21

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

and $\frac{3}{7} = \frac{3}{7}\times\frac{3}{3} = \frac{9}{21}$

Hence, required fractions are $\frac{7}{21}$ and $\frac{9}{21}$. **Ans.**

(b) L.C.M. of 5 and $6 = 30$

$\frac{3}{5} = \frac{3\times6}{5\times6} = \frac{18}{30}$ and $\frac{5}{6} = \frac{5\times5}{6\times5} = \frac{25}{30}$

Hence, required fractions are $\frac{18}{30}$ and $\frac{25}{30}$. **Ans.**

(c) L.C.M. of 5 and $3 = 15$

$\frac{4}{5} = \frac{4\times3}{5\times3} = \frac{12}{15}$ and $\frac{1}{3} = \frac{1\times5}{3\times5} = \frac{5}{15}$

Hence, required fractions are $\frac{12}{15}$ and $\frac{5}{15}$. **Ans.**

(d) L.C.M. of 6 and $6 = 6$

Hence, required fractions are $\frac{1}{6}$ and $\frac{2}{6}$ **Ans.**

(e) L.C.M. of 7 and $14 = 14$

$\frac{2}{7} = \frac{2\times2}{7\times2} = \frac{4}{14}$ and $\frac{5}{14} = \frac{5\times1}{14\times1} = \frac{5}{14}$

Hence, required fractions are $\frac{4}{14}$ and $\frac{5}{14}$. **Ans.**

(f) L.C.M. of 10 and $4 = 20$

$\frac{3}{10} = \frac{3\times2}{10\times2} = \frac{6}{20}$ and $\frac{3}{4} = \frac{3\times5}{4\times5} = \frac{15}{20}$

Hence, required fractions are $\frac{6}{20}$ and $\frac{15}{20}$. **Ans.**

Exercise 11 E

1. (a) $\frac{9}{12} > \frac{2}{3}$ (b) $\frac{11}{21} > \frac{3}{7}$ (c) $\frac{7}{16} < \frac{31}{32}$ (d) $\frac{9}{12} > \frac{3}{6}$ (e) $\frac{1}{3} < \frac{3}{4}$ (f) $\frac{3}{4} > \frac{1}{2}$

(g) $3\frac{1}{9} > \frac{9}{28}$ (h) $\frac{21}{5} < \frac{21}{3}$ (i) $\frac{13}{25} < \frac{25}{9}$ (j) $\frac{13}{20} < \frac{14}{20}$

(k) $\frac{12}{19} < \frac{33}{30}$ (l) $\frac{23}{30} = \frac{46}{60}$

2. (a) L.C.M. of 6, 18, 24 and $3 = 72$

$\therefore \frac{1}{6} = \frac{1\times12}{6\times12} = \frac{12}{72}$ $(72 \div 6 = 12)$

$\frac{5}{18} = \frac{5\times4}{18\times4} = \frac{20}{72}$ $(72 \div 8 = 4)$

$\frac{17}{4} = \frac{17\times3}{24\times3} = \frac{51}{72}$ $(72 \div 24 = 3)$

and $\frac{2}{3}=\frac{2\times24}{3\times24}=\frac{48}{72}$ $(72\div3=24)$

The equivalent fractions in ascending order are

$$\frac{12}{72}<\frac{20}{72}<\frac{48}{72}<\frac{51}{72}$$

Thus, the given fractions in ascending order are

$$\frac{1}{6}<\frac{5}{18}<\frac{2}{3}<\frac{17}{24}$$ **Ans.**

(b) L.C.M. of 4, 12, 8, $12=24$

$\therefore$ $\frac{1}{4}=\frac{1\times6}{4\times6}=\frac{6}{24}$ $(24\div4=6)$

$\frac{5}{12}=\frac{5\times2}{12\times2}=\frac{10}{24}$ $(24\div12=2)$

$\frac{7}{8}=\frac{7\times3}{8\times3}=\frac{21}{24}$ $(24\div8=3)$

and $\frac{7}{12}=\frac{7\times2}{12\times2}=\frac{14}{24}$ $(24\div12=2)$

The equivalent fractions in ascending order are

$$\frac{6}{24}<\frac{10}{24}<\frac{14}{24}<\frac{21}{24}$$

Thus, the given fractions in ascending order are

$$\frac{1}{4}<\frac{5}{12}<\frac{7}{12}<\frac{7}{8}$$ **Ans.**

(c) L.C.M. of 3, 7, 8 and $7=168$

$\therefore$ $\frac{2}{3}=\frac{2\times56}{3\times56}=\frac{112}{168}$ $(168\div3=56)$

$\frac{4}{7}=\frac{4\times24}{7\times24}=\frac{96}{168}$ $(168\div7=24)$

$\frac{5}{8}=\frac{5\times21}{8\times21}=\frac{105}{168}$ $(168\div8=21)$

and $\frac{5}{7}=\frac{5\times24}{7\times24}=\frac{120}{168}$ $(168\div7=24)$

Ascending order are $\frac{96}{168}<\frac{105}{168}<\frac{112}{168}<\frac{120}{168}$

Thus, ascending order are $\frac{4}{7}<\frac{5}{8}<\frac{2}{3}<\frac{5}{7}$ **Ans.**

(d) L.C.M. of 4, 5, 8 and $16=80$

$\therefore \quad \frac{1}{4}=\frac{1\times 20}{4\times 20}=\frac{20}{80} \qquad (80\div 4=20)$

$\frac{4}{5}=\frac{4\times 16}{5\times 16}=\frac{64}{80} \qquad (80\div 5=16)$

$\frac{3}{8}=\frac{3\times 10}{8\times 10}=\frac{30}{80} \qquad (80\div 8=10)$

and $\frac{5}{16}=\frac{5\times 5}{16\times 5}=\frac{25}{80} \qquad (80\div 16=5)$

Ascending order are $\frac{20}{80}<\frac{25}{80}<\frac{30}{80}<\frac{64}{80}$

Thus, ascending order are $\frac{1}{4}<\frac{5}{16}<\frac{3}{8}<\frac{4}{5}$. **Ans.**

(e) L.C.M. of 3, 6, 8 and $2=24$

$\therefore \quad \frac{2}{3}=\frac{2\times 8}{3\times 8}=\frac{16}{24} \qquad (24\div 3=8)$

$\frac{5}{6}=\frac{5\times 4}{6\times 4}=\frac{20}{24} \qquad (24\div 6=4)$

$\frac{3}{8}=\frac{3\times 3}{8\times 3}=\frac{9}{24} \qquad (24\div 8=3)$

and $\frac{1}{2}=\frac{1\times 12}{2\times 12}=\frac{12}{24} \qquad (24\div 2=12)$

Ascending order are $\frac{9}{24}<\frac{12}{24}<\frac{16}{24}<\frac{20}{24}$

Thus, ascending order are $\frac{3}{8}<\frac{1}{2}<\frac{2}{3}<\frac{5}{6}$. **Ans.**

(f) Since, denominator of the given fractions are equal.

$\therefore$Ascending order are $\frac{1}{15}<\frac{2}{15}<\frac{4}{15}<\frac{11}{15}$ **Ans.**

(g) The L.C.M. of 4, 12, 14 and $12=84$

$\therefore \quad \frac{3}{4}=\frac{3\times 21}{4\times 21}=\frac{63}{84} \qquad (84\div 4=21)$

$\frac{7}{12}=\frac{7\times 7}{12\times 7}=\frac{49}{84} \qquad (84\div 12=7)$

$\frac{9}{14}=\frac{9\times 6}{14\times 6}=\frac{54}{84} \qquad (84\div 14=6)$

and $\frac{5}{12}=\frac{5\times 7}{12\times 7}=\frac{35}{84} \qquad (84\div 12=7)$

$\therefore$ Ascending order are $\frac{35}{84} < \frac{49}{84} < \frac{54}{84} < \frac{63}{84}$

Thus, ascending order are $\frac{5}{12} < \frac{7}{12} < \frac{9}{14} < \frac{3}{4}$. **Ans.**

(h) The L.C.M. of 7, 21, 14 and $35 = 210$

$\therefore \quad \frac{5}{7} = \frac{5 \times 30}{7 \times 30} = \frac{150}{210}$ $(210 \div 7 = 30)$

$\frac{8}{21} = \frac{8 \times 10}{21 \times 10} = \frac{80}{210}$ $(210 \div 21 = 10)$

$\frac{9}{14} = \frac{9 \times 15}{14 \times 15} = \frac{135}{210}$ $(210 \div 14 = 15)$

and $\frac{19}{35} = \frac{19 \times 6}{35 \times 6} = \frac{114}{210}$ $(210 \div 35 = 6)$

$\therefore$ Ascending order are $\frac{80}{210} < \frac{114}{210} < \frac{135}{210} < \frac{150}{210}$

Thus, ascending order are $\frac{8}{21} < \frac{19}{35} < \frac{9}{14} < \frac{5}{7}$. **Ans.**

(i) L.C.M. of 16, 7, 9 and $6 = 1008$

$\therefore \quad \frac{4}{16} = \frac{4 \times 63}{16 \times 63} = \frac{252}{1008}$ $(1008 \div 16 = 63)$

$\frac{4}{7} = \frac{4 \times 144}{7 \times 144} = \frac{576}{1008}$ $(1008 \div 7 = 144)$

$\frac{4}{9} = \frac{4 \times 112}{9 \times 112} = \frac{448}{1008}$ $(1008 \div 9 = 112)$

$\frac{4}{6} = \frac{4 \times 168}{6 \times 168} = \frac{672}{1008}$ $(1008 \div 6 = 168)$

$\therefore$ Ascending order are $\frac{252}{1008} < \frac{448}{1008} < \frac{576}{1008} < \frac{672}{1008}$

Thus, ascending order are $\frac{4}{16} < \frac{4}{9} < \frac{4}{7} < \frac{4}{6}$. **Ans.**

3. (a) L.C.M. of 4,1, 4 and $8 = 8$

$\frac{9}{4} = \frac{9 \times 2}{4 \times 2} = \frac{18}{8}$; $\frac{5}{1} = \frac{5 \times 8}{1 \times 8} = \frac{40}{8}$

$\frac{7}{4} = \frac{7 \times 2}{4 \times 2} = \frac{14}{8}$; $\frac{35}{8} = \frac{35}{8}$

$\therefore$ Descending order are $\frac{40}{8} > \frac{35}{8} > \frac{18}{8} > \frac{14}{8}$

Thus, descending order are $5 > \frac{35}{8} > \frac{9}{4} > \frac{7}{4}$. **Ans.**

(b) L.C.M. of 3, 3, 3 and $4 = 12$

$$\frac{13}{3} = \frac{13 \times 4}{3 \times 4} = \frac{52}{12}; \quad \frac{14}{3} = \frac{14 \times 4}{3 \times 4} = \frac{56}{12}$$

$$\frac{2}{3} = \frac{2 \times 4}{3 \times 4} = \frac{8}{12}; \quad \frac{19}{4} = \frac{19 \times 3}{4 \times 3} = \frac{57}{12}$$

$\therefore$ Descending order are $\frac{57}{12} > \frac{56}{12} > \frac{52}{12} > \frac{8}{12}$

Thus, descending order are $\frac{19}{4} > \frac{14}{3} > \frac{13}{3} > \frac{2}{3}$. **Ans.**

(c) L.C.M. of 3, 4 and $6 = 12$

$$\frac{5}{3} = \frac{5 \times 4}{3 \times 4} = \frac{20}{12}; \quad \frac{1}{1} = \frac{1 \times 12}{1 \times 12} = \frac{12}{12}; \quad \frac{1}{4} = \frac{1 \times 3}{4 \times 3} = \frac{3}{12}$$

$$\frac{13}{6} = \frac{13 \times 2}{6 \times 2} = \frac{26}{12}$$

$\therefore$ Descending order are $\frac{26}{12} > \frac{20}{12} > \frac{12}{12} > \frac{3}{12}$

Thus, descending order are $\frac{13}{6} > \frac{5}{3} > 1 > \frac{1}{4}$. **Ans.**

(d) Since, all denominators of given fractions are 13.

$\therefore$ Descending order are $\frac{11}{13} > \frac{7}{13} > \frac{3}{13} > \frac{2}{13}$ **Ans.**

(e) L.C.M. of 8, 16, 8 and $32 = 32$

$$\frac{3}{8} = \frac{3 \times 4}{8 \times 4} = \frac{12}{32}; \quad \frac{5}{8} = \frac{5 \times 4}{8 \times 4} = \frac{20}{32}; \quad \frac{7}{16} = \frac{7 \times 2}{16 \times 2} = \frac{14}{32}$$

$$\frac{31}{32} = \frac{31 \times 1}{32 \times 1} = \frac{31}{32}$$

$\therefore$ Descending order are $\frac{31}{32} > \frac{20}{32} > \frac{14}{32} > \frac{12}{32}$

Thus, descending order are $\frac{31}{32} > \frac{5}{8} > \frac{7}{16} > \frac{3}{8}$ **Ans.**

(f) L.C.M. of 3, 4 and $12 = 12$

$$\frac{5}{3} = \frac{5 \times 4}{3 \times 4} = \frac{20}{12}; \quad \frac{27}{12} = \frac{27}{12}; \quad \frac{3}{4} = \frac{3 \times 3}{4 \times 3} = \frac{9}{12}; \quad \frac{7}{12} = \frac{7 \times 1}{12 \times 1} = \frac{7}{12}$$

$\therefore$ Descending order are $\frac{27}{12} > \frac{20}{12} > \frac{9}{12} > \frac{7}{12}$

Thus, descending order are $\frac{27}{12} > \frac{5}{3} > \frac{3}{4} > \frac{7}{12}$. **Ans.**

(g) L.C.M. of 7, 14 and $14 = 14$

$\therefore \quad \frac{8}{7} = \frac{8 \times 2}{7 \times 2} = \frac{16}{14}; \quad \frac{30}{14}; \quad \frac{31}{14}$

$\therefore$ Descending order are $\frac{31}{14} > \frac{30}{14} > \frac{16}{14}$

Thus, descending order are $2\frac{3}{14} > \frac{30}{14} > 1\frac{1}{7}$. **Ans.**

(h) L.C.M. of 3, 6, 9 and $12 = 36$

$\therefore \frac{4}{9} = \frac{4 \times 4}{9 \times 4} = \frac{16}{36}; \quad \frac{5}{12} = \frac{5 \times 3}{12 \times 3} = \frac{15}{36}; \quad \frac{5}{6} = \frac{5 \times 6}{6 \times 6} = \frac{30}{36};$

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

$\therefore$ Descending order are $\frac{30}{36} > \frac{24}{36} > \frac{16}{36} > \frac{15}{36}$

Thus, descending order are $\frac{5}{6} > \frac{2}{3} > \frac{4}{9} > \frac{5}{12}$. **Ans.**

(i) L.C.M. of 5, 8, 4 and $12 = 120$

$\frac{3}{5} = \frac{3 \times 24}{5 \times 24} = \frac{72}{120}; \frac{5}{8} = \frac{5 \times 15}{8 \times 15} = \frac{75}{120}; \frac{3}{4} = \frac{3 \times 30}{4 \times 30} = \frac{90}{120};$

$\frac{7}{12} = \frac{7 \times 10}{12 \times 10} = \frac{70}{120}$

$\therefore$ Descending order are $\frac{90}{120} > \frac{75}{120} > \frac{72}{120} > \frac{70}{120}$

Thus, descending order are $\frac{3}{4} > \frac{5}{8} > \frac{3}{5} > \frac{7}{12}$. **Ans.**

4. (a) The reciprocal of $\frac{3}{7}$ is $\frac{7}{3}$. **Ans.**

(b) The reciprocal of $\frac{11}{3}$ of $\frac{3}{11}$. **Ans.**

(c) The reciprocal of $\frac{16}{3}$ is $\frac{3}{16}$. **Ans.**

(d) The reciprocal of $\frac{2}{7}$ is $\frac{7}{2}$. **Ans.**

(e) The reciprocal of $1\frac{1}{3}$ or $\frac{4}{3}$ is $\frac{3}{4}$. **Ans.**

(f) The reciprocal of $\frac{2}{3}$ is $\frac{3}{2}$. **Ans.**

12. Addition and Subtraction of Fractions

Exercise 12 A

1. (a) L.C.M. of 3 and 7 is 21. $\frac{1}{3}+\frac{1}{7}=\frac{7+3}{21}=\frac{10}{21}$ **Ans.**

(b) L.C.M. of 3, 15 and 12 is 60.

$$\frac{1}{3}+\frac{4}{15}+\frac{5}{12}=\frac{20+16+25}{60}=\frac{61}{60}=1\frac{1}{60}$$ **Ans.**

(c) L.C.M. of 3, 2 and 4 is 12.

$$\frac{1}{3}+\frac{1}{2}+\frac{1}{4}=\frac{4+6+3}{12}=\frac{13}{12}=1\frac{1}{12}$$ **Ans.**

(d) L.C.M. of 2 and 26 is 26. $\frac{1}{2}+\frac{12}{26}=\frac{13+12}{26}=\frac{25}{26}$ **Ans.**

(e) L.C.M. of 5 and $6=30$ $\frac{3}{5}+\frac{1}{6}=\frac{18+5}{30}=\frac{23}{30}$ **Ans.**

(f) L.C.M. of 2 and $4=4$ $\frac{1}{2}+\frac{3}{4}=\frac{2+3}{4}=\frac{5}{4}=1\frac{1}{4}$ **Ans.**

(g) L.C.M. of 2, 9 and $6=18$ $\frac{1}{2}+\frac{1}{9}+\frac{1}{6}=\frac{9+2+3}{18}=\frac{14}{18}=\frac{7}{9}$ **Ans.**

(h) $\frac{2}{7}+\frac{1}{7}+\frac{3}{7}=\frac{2+1+3}{7}=\frac{6}{7}$ **Ans.** (i) $\frac{5}{18}+\frac{7}{18}=\frac{5+7}{18}=\frac{12}{18}=\frac{2}{3}$ **Ans.**

(j) $\frac{1}{5}+\frac{1}{10}=\frac{2+1}{10}=\frac{3}{10}$ **Ans.** (k) $\frac{3}{6}+\frac{2}{6}=\frac{3+2}{6}=\frac{5}{6}$ **Ans.**

(l) $\frac{3}{10}+\frac{7}{10}=\frac{3+7}{10}=\frac{10}{10}=1$ **Ans.**

(m) $\frac{9}{16}+\frac{3}{4}=\frac{9+12}{16}=\frac{21}{16}=1\frac{5}{16}$ **Ans.**

(n) $\frac{5}{66}+\frac{8}{66}=\frac{5+8}{66}=\frac{13}{66}$ **Ans.**

(o) $1\frac{1}{7}+2\frac{3}{7}=\frac{8}{7}+\frac{17}{7}=\frac{8+17}{7}=\frac{25}{7}=3\frac{4}{7}$ **Ans.**

(p) $\frac{10}{25}+\frac{12}{25}=\frac{10+12}{25}=\frac{22}{25}$ **Ans.**

(q) $\frac{5}{27}+\frac{4}{27}+\frac{3}{27}=\frac{5+4+3}{27}=\frac{12}{27}=\frac{4}{9}$ **Ans.**

(r) $\frac{7}{15}+\frac{4}{15}=\frac{7+4}{15}=\frac{11}{15}$ **Ans.**

(s) $1\frac{1}{2}+3\frac{4}{5}=\frac{3}{2}+\frac{19}{5}=\frac{15+38}{10}=\frac{53}{10}=5\frac{3}{10}$ **Ans.**

(t) $\frac{2}{9}+\frac{1}{3}=\frac{2+3}{9}=\frac{5}{9}$ **Ans.**

(u) $\frac{1}{6}+\frac{7}{18}=\frac{3+7}{18}=\frac{10}{18}=\frac{5}{9}$ **Ans.**

2. (a) $\frac{14}{9}+\frac{31}{12}+\frac{3}{4}=\frac{56+93+27}{36}=\frac{176}{36}=\frac{88}{18}=\frac{44}{9}=4\frac{8}{9}$ **Ans.**

(b) $\frac{40}{7}+\frac{23}{18}=\frac{720+161}{126}=\frac{881}{126}=6\frac{125}{126}$ **Ans.**

(c) $2\frac{10}{17}+3\frac{11}{17}=\frac{44}{17}+\frac{62}{17}=\frac{44+62}{17}=\frac{106}{17}=6\frac{4}{17}$ **Ans.**

(d) $\frac{5}{8}+\frac{9}{12}+\frac{13}{12}=\frac{15+18+26}{24}=\frac{59}{24}=2\frac{11}{24}$ **Ans.**

(e) $3\frac{2}{24}+5\frac{9}{16}+1\frac{2}{8}=\frac{74}{24}+\frac{89}{16}+\frac{10}{8}=\frac{148+267+60}{48}=\frac{475}{48}=9\frac{43}{48}$ **Ans.**

(f) $5\frac{5}{8}+6\frac{13}{24}+7\frac{4}{16}=\frac{45}{8}+\frac{157}{24}+\frac{116}{16}$

$=\frac{270+314+348}{48}=\frac{932}{48}=19\frac{20}{48}=19\frac{5}{12}$ **Ans.**

(g) $7\frac{5}{6}+6\frac{13}{24}+5\frac{1}{16}=\frac{47}{6}+\frac{157}{24}+\frac{81}{16}$

$=\frac{376+314+243}{48}=\frac{933}{48}=19\frac{7}{16}$ **Ans.**

(h) $\frac{1}{6}+3\frac{2}{9}=\frac{1}{6}+\frac{29}{9}=\frac{3+58}{18}=\frac{61}{18}=3\frac{7}{18}$ **Ans.**

(i) $2\frac{2}{3}+3\frac{3}{4}+5\frac{5}{6}=\frac{8}{3}+\frac{15}{4}+\frac{35}{6}=\frac{32+45+70}{12}=\frac{147}{12}=12\frac{3}{12}$ **Ans.**

Exercise 12 B

1. (a) $\frac{17}{18}-\frac{6}{18}=\frac{17-6}{18}=\frac{11}{18}$ **Ans.** (b) $\frac{13}{27}-\frac{12}{27}=\frac{13-12}{27}=\frac{1}{27}$ **Ans.**

(c) $\frac{23}{29}-\frac{20}{29}=\frac{23-20}{29}=\frac{3}{29}$ **Ans.** (d) $\frac{12}{19}-\frac{11}{19}=\frac{12-11}{19}=\frac{1}{19}$ **Ans.**

(e) $\frac{5}{9}-\frac{3}{9}=\frac{5-3}{9}=\frac{2}{9}$ **Ans.** (f) $\frac{19}{26}-\frac{15}{26}=\frac{19-15}{26}=\frac{4}{26}=\frac{2}{13}$ **Ans.**

(g) $\frac{9}{14}-\frac{3}{14}=\frac{9-3}{14}=\frac{6}{14}=\frac{3}{7}$ **Ans.** (h) $\frac{15}{23}-\frac{9}{23}=\frac{15-9}{23}=\frac{6}{23}$ **Ans.**

(i) $\frac{9}{17}-\frac{2}{17}=\frac{9-2}{17}=\frac{7}{17}$ **Ans.** (j) $\frac{7}{10}-\frac{3}{10}=\frac{7-3}{10}=\frac{4}{10}=\frac{2}{5}$ **Ans.**

(k) $\frac{23}{25}-\frac{11}{25}=\frac{23-11}{25}=\frac{12}{25}$ **Ans.** (l) $\frac{47}{51}-\frac{8}{51}=\frac{47-8}{51}=\frac{39}{51}$ **Ans.**

(m) $\frac{15}{28}-\frac{5}{28}=\frac{15-5}{28}=\frac{10}{28}=\frac{5}{14}$ **Ans.**

(n) $\frac{16}{30}-\frac{13}{30}=\frac{16-13}{30}=\frac{3}{30}=\frac{1}{10}$ **Ans.**

(o) $\frac{6}{41}-\frac{3}{41}=\frac{6-3}{41}=\frac{3}{41}$ **Ans.**

Exercise 12 C

1. (a) L.C.M. of 10 and $5=10$ $\frac{9}{10}-\frac{3}{5}=\frac{9-6}{10}=\frac{3}{10}$ **Ans.**

(b) $\frac{11}{36}-\frac{1}{9}=\frac{11-4}{36}=\frac{7}{36}$ **Ans.** (c) $\frac{8}{11}-\frac{6}{22}=\frac{16-6}{22}=\frac{10}{22}=\frac{5}{11}$ **Ans.**

(d) $\frac{6}{7}-\frac{1}{2}=\frac{12-7}{14}=\frac{5}{14}$ **Ans.** (e) $\frac{23}{40}-\frac{1}{8}=\frac{23-5}{40}=\frac{18}{40}=\frac{9}{20}$ **Ans.**

(f) $\frac{2}{9}-\frac{2}{11}=\frac{22-18}{99}=\frac{4}{99}$ **Ans.** (g) $\frac{5}{12}-\frac{2}{9}=\frac{15-8}{36}=\frac{7}{36}$ **Ans.**

(h) $\frac{1}{5}-\frac{1}{6}=\frac{6-5}{30}=\frac{1}{30}$ **Ans.** (i) $\frac{7}{16}-\frac{3}{24}=\frac{21-6}{48}=\frac{15}{48}$ **Ans.**

(j) $\frac{1}{4}-\frac{1}{5}=\frac{5-4}{20}=\frac{1}{20}$ **Ans.** (k) $\frac{3}{4}-\frac{1}{8}=\frac{6-1}{8}=\frac{5}{8}$ **Ans.**

(l) $\frac{7}{9}-\frac{11}{15}=\frac{35-33}{45}=\frac{2}{45}$ **Ans.** (m) $\frac{9}{10}-\frac{3}{5}=\frac{9-6}{10}=\frac{3}{10}$ **Ans.**

(n) $\frac{2}{10}-\frac{2}{15}=\frac{6-4}{30}=\frac{2}{30}=\frac{1}{15}$ **Ans.**

(o) $\frac{8}{15}-\frac{6}{20}=\frac{32-18}{60}=\frac{14}{60}=\frac{7}{30}$ **Ans.**

(p) $\frac{1}{2}-\frac{1}{4}=\frac{2-1}{4}=\frac{1}{4}$ **Ans.**

Exercise 12 D

1. (a) $12\frac{3}{47}-10\frac{2}{47}=\frac{567}{47}-\frac{472}{47}=\frac{567-472}{47}=\frac{95}{47}=2\frac{1}{47}$ **Ans.**

(b) $6\frac{3}{4}-4\frac{2}{5}=\frac{27}{4}-\frac{22}{5}=\frac{135-88}{20}=\frac{47}{20}=2\frac{7}{20}$ **Ans.**

(c) $1\frac{1}{6}-1\frac{1}{9}=\frac{7}{6}-\frac{10}{9}=\frac{21-20}{18}=\frac{1}{18}$ **Ans.**

(d) $4\frac{1}{2}-3\frac{1}{2}=\frac{9}{2}-\frac{7}{2}=\frac{9-7}{2}=\frac{2}{2}=1$ **Ans.**

(e) $6\frac{11}{12}-1\frac{11}{24}=\frac{83}{12}-\frac{35}{24}=\frac{166-35}{24}=\frac{131}{24}=5\frac{11}{24}$ **Ans.**

(f) $2\frac{3}{5}-1\frac{1}{4}=\frac{13}{5}-\frac{5}{4}=\frac{52-25}{20}=\frac{27}{20}=1\frac{7}{20}$ **Ans.**

(g) $12-4\frac{3}{7}=\frac{12}{1}-\frac{31}{7}=\frac{84-31}{7}=\frac{53}{7}=7\frac{4}{7}$ **Ans.**

(h) $1-\frac{1}{3}=\frac{3-1}{3}=\frac{2}{3}$ **Ans.** (i) $3\frac{1}{5}-0=\frac{16}{5}-0=3\frac{1}{5}$ **Ans.**

(j) $3\frac{1}{6}-1\frac{1}{3}=\frac{19}{6}-\frac{4}{3}=\frac{19-8}{6}=\frac{11}{6}=1\frac{5}{6}$ **Ans.**

(k) $6\frac{1}{3}-3\frac{2}{10}=\frac{19}{3}-\frac{32}{10}=\frac{190-96}{30}=\frac{94}{30}=\frac{47}{15}=3\frac{2}{15}$ **Ans.**

(l) $5\frac{4}{9}-2\frac{3}{4}=\frac{49}{9}-\frac{11}{4}=\frac{196-99}{36}=\frac{97}{36}=2\frac{25}{36}$ **Ans.**

(m) $4\frac{5}{18}-1\frac{2}{9}=\frac{77}{18}-\frac{11}{9}=\frac{77-22}{18}=\frac{55}{18}=3\frac{1}{18}$ **Ans.**

(n) $5\frac{1}{2}-1\frac{1}{2}=\frac{11}{2}-\frac{3}{2}=\frac{11-3}{2}=\frac{8}{2}=4$ **Ans.**

(o) $8\frac{10}{19}-1\frac{5}{19}=\frac{162}{19}-\frac{24}{19}=\frac{162-24}{19}=\frac{138}{19}=7\frac{5}{19}$ **Ans.**

Exercise 12 E

1. Total quantity of oil $=\frac{1}{4}l+\frac{3}{5}l=\frac{5+12}{20}l=\frac{17}{20}l$

Hence, $\frac{17}{20}$ litre oil in both the tins. **Ans.**

2. Height of Seeta $=1\frac{1}{7}\text{ m}=\frac{8}{7}\text{ m}$

Height of Geeta $=1\frac{1}{9}\text{ m}=\frac{10}{9}\text{ m}$

Differecne $=\frac{8}{7}-\frac{10}{9}=\frac{72-70}{63}=\frac{2}{63}$

Hence, Sita is taller than Geeta and by $\frac{2}{63}$ m. **Ans.**

3. Weight of remaing vegetables $= 5\frac{5}{7}\text{ kg} - 2\frac{11}{12}\text{ kg}$

$= \frac{40}{7}\text{ kg} - \frac{35}{12}\text{ kg} = \frac{480-245}{84}\text{ kg} = \frac{235}{84}\text{ kg} = 2\frac{67}{84}\text{ kg}$

Hence, weight of remaining vegetables $= 2\frac{67}{84}$ kg. **Ans.**

4. Left cloth $= 10\frac{3}{4}\text{ m} - 2\frac{2}{5}\text{ m} = \frac{43}{4}\text{ m} - \frac{12}{5}\text{ m}$

$= \frac{215-48}{20}\text{ m} = \frac{167}{20}\text{ m} = 8\frac{7}{20}\text{ m}$

Hence, $8\frac{7}{20}$ m cloth was left. **Ans.**

5. Total weight of grains $= 10\text{ kg} + 10\frac{2}{3}\text{ kg} + 5\frac{3}{4}\text{ kg}$

$= \left(10 + \frac{32}{3} + \frac{23}{4}\right)\text{kg} = \left(\frac{120+128+69}{12}\right)\text{kg} = \frac{317}{12} = 26\frac{5}{12}\text{ kg}$

Hence, total weight of grains $= 26\frac{5}{12}$ kg **Ans.**

6. Chocolate bar is left $= 1 - \frac{1}{4} = \frac{4-1}{4} = \frac{3}{4}$

Hence, $\frac{3}{4}$ bar is left. **Ans.**

7. Total weight of vegetables $= 3\frac{1}{2}\text{ kg} + \frac{2}{5}\text{ kg} + \frac{1}{3}\text{ kg} + 1\frac{1}{2}\text{ kg}$

$= \frac{7}{2}\text{ kg} + \frac{2}{5}\text{ kg} + \frac{1}{3}\text{ kg} + \frac{3}{2}\text{ kg} = \frac{105+12+10+45}{30}\text{ kg} = \frac{172}{30}\text{ kg}$

$= \frac{86}{15}\text{ kg} = 5\frac{11}{15}\text{ kg}$

Hence, total weight of vegetables $= 5\frac{11}{15}$ kg **Ans.**

8. Total capacity of both tins $= 3\frac{2}{5}\,l + 5\frac{3}{4}\,l$

$= \frac{17}{5}\,l + \frac{23}{4}\,l = \frac{68+115}{20}\,l = \frac{183}{20}\,l = 9\frac{3}{20}\,l$

Hence, total capacity of both tins $= 9\frac{3}{20}\ l$ **Ans.**

9. Perimeter of the field $= 10\frac{2}{5}\text{ m} + 7\frac{2}{3}\text{ m} + 3\frac{2}{5}\text{ m} + 7\frac{2}{5}\text{ m}$

$= \frac{52}{5}\text{ m} + \frac{23}{3}\text{ m} + \frac{17}{5}\text{ m} + \frac{37}{5}\text{ m} = \frac{156+115+51+111}{15}\text{ m}$

$= \frac{433}{15}\text{ m} = 28\frac{13}{15}\text{ m}$

Hence, Perimeter of the field $= 28\frac{13}{15}\text{ m}$ **Ans.**

10. Sum of travelled by scooter and by car $= 10\frac{2}{9}\text{ km} + 25\frac{3}{4}\text{ km}$

$= \frac{92}{9}\text{ km} + \frac{103}{4}\text{ km} = \frac{368+927}{36}\text{ km} = \frac{1295}{36}\text{ km}$

Total distance $= 50\frac{1}{9} = \frac{451}{9}\text{ km}$

He travelled on foot $= \frac{451}{9}\text{ km} - \frac{1295}{36}\text{ km}$

$= \frac{1804-1295}{36}\text{ km} = \frac{509}{36}\text{ km} = 14\frac{5}{36}\text{ km}$

Hence, $14\frac{5}{36}$ km he travelled on foot. **Ans.**

13. Multiplication and Division of Fractional Numbers

Exercise 13 A

1. (a) $1\frac{7}{8} \times 3\frac{1}{5} = \frac{15}{8} \times \frac{16}{5} = \frac{15\times16}{8\times5} = \frac{240}{40} = 6$ **Ans.**

(b) $\frac{4}{3} \times \frac{9}{7} \times \frac{7}{16} = \frac{4\times9\times7}{3\times7\times16} = \frac{252}{336} = \frac{63}{84} = \frac{3}{4}$ **Ans.**

(c) $5\frac{8}{9} \times 0 = \frac{53}{9} \times 0 = 0$ **Ans.** (d) $\frac{7}{9} \times \frac{2}{3} = \frac{7\times2}{9\times3} = \frac{14}{27}$ **Ans.**

(e) $\frac{3}{7} \times \frac{11}{15} \times \frac{7}{12} = \frac{3\times11\times7}{7\times15\times12} = \frac{231}{1260} = \frac{11}{60}$ **Ans.**

(f) $8\frac{7}{9} \times 10\frac{1}{8} = \frac{79}{9} \times \frac{81}{8} = \frac{79\times81}{9\times8} = \frac{6399}{72} = 88\frac{7}{8}$ **Ans.**

(g) $\frac{7}{8} \times \frac{16}{21} = \frac{7\times16}{8\times21} = \frac{1\times2}{1\times3} = \frac{2}{3}$ **Ans.**

(h) $\frac{1}{5} \times 6\frac{1}{2} \times \frac{8}{91} = \frac{1}{5} \times \frac{13}{2} \times \frac{8}{91} = \frac{1}{5} \times 13 \times \frac{4}{91} = \frac{1}{5} \times 1 \times \frac{4}{7} = \frac{1 \times 4}{5 \times 7} = \frac{4}{35}$

Ans.

(i) $18 \times 10\frac{2}{7} = 18 \times \frac{72}{7} = \frac{1296}{7} = 185\frac{1}{7}$ **Ans.**

(j) $5 \times \frac{1}{3} = \frac{5 \times 1}{3} = \frac{5}{3} = 1\frac{2}{3}$ **Ans.**

(k) $12\frac{1}{2} \times 3\frac{1}{5} = \frac{25}{2} \times \frac{16}{5} = \frac{5}{1} \times \frac{8}{1} = 5 \times 8 = 40$ **Ans.**

(l) $\frac{22}{5} \times \frac{15}{11} = \frac{2}{1} \times \frac{3}{1} = 6$ **Ans.** (m) $\frac{2}{3} \times \frac{3}{4} = \frac{1}{1} \times \frac{1}{2} = \frac{1}{2}$ **Ans.**

(n) $\frac{7}{11} \times \frac{33}{49} \times \frac{14}{44} = \frac{1}{1} \times \frac{3}{7} \times \frac{14}{44} = \frac{3}{1} \times \frac{2}{44} = 3 \times \frac{1}{22} = \frac{3}{22}$ **Ans.**

(o) $9\frac{2}{3} \times 2 = \frac{29}{3} \times 2 = \frac{58}{3} = 19\frac{1}{3}$ **Ans.** (p) $\frac{1}{2} \times \frac{5}{6} = \frac{1 \times 5}{2 \times 6} = \frac{5}{12}$ **Ans.**

(q) $\frac{4}{5} \times \frac{2}{3} \times \frac{25}{16} = \frac{1}{1} \times \frac{2}{3} \times \frac{5}{4} = \frac{1}{3} \times \frac{5}{2} = \frac{5}{6}$ **Ans.**

(r) $12 \times 8\frac{5}{6} = 12 \times \frac{53}{6} = 2 \times 53 = 106$ **Ans.**

(s) $\frac{3}{8} \times \frac{12}{21} = \frac{1}{4} \times \frac{6}{7} = \frac{1}{2} \times \frac{3}{7} = \frac{3}{14}$ **Ans.**

(t) $\frac{17}{63} \times \frac{2}{5} = \frac{17 \times 2}{63 \times 5} = \frac{34}{315}$ **Ans.**

(u) $4\frac{3}{4} \times 1\frac{7}{57} = \frac{19}{4} \times \frac{64}{57} = \frac{1}{1} \times \frac{16}{3} = \frac{16}{3} = 5\frac{1}{3}$ **Ans.**

(v) $\frac{2}{7} \times \frac{3}{5} = \frac{2 \times 3}{7 \times 5} = \frac{6}{35}$ **Ans.**

(w) $\frac{33}{16} \times \frac{24}{25} \times \frac{8}{9} = \frac{11}{2} \times \frac{24}{25} \times \frac{1}{3} = \frac{11}{2} \times \frac{8}{25} \times \frac{1}{1} = \frac{88}{50} = \frac{44}{25} = 1\frac{19}{25}$ **Ans.**

(x) $3\frac{1}{5} \times 1\frac{3}{8} = \frac{16}{5} \times \frac{11}{8} = \frac{2}{5} \times \frac{11}{1} = \frac{22}{5} = 4\frac{2}{5}$ **Ans.**

(y) $2\frac{3}{4} \times 4\frac{4}{5} \times 6\frac{3}{8} = \frac{11}{4} \times \frac{24}{5} \times \frac{51}{8}$

$= \frac{11}{4} \times \frac{3}{5} \times \frac{51}{1} = \frac{11 \times 3 \times 51}{4 \times 5} = \frac{1683}{20} = 84\frac{3}{20}$ **Ans.**

(z) $5\frac{1}{10} \times \frac{13}{17} = \frac{51}{10} \times \frac{13}{17} = \frac{3}{10} \times \frac{13}{1} = \frac{3 \times 13}{10 \times 1} = \frac{39}{10} = 3\frac{9}{10}$ **Ans.**

Exercise 13 B

1. (a) Reciprocal of $\frac{9}{25}$ is $\frac{25}{9}$ **Ans.** (b) Reciprocal of 25 is $\frac{1}{25}$ **Ans.**

(c) Reciprocal of $4\frac{4}{15}$ or $\frac{64}{15}$ is $\frac{15}{64}$ **Ans.**

(d) Reciprocal of $4\frac{4}{15}$ or $\frac{64}{15}$ is $\frac{15}{64}$ **Ans.**

(e) Reciprocal of $\frac{1}{5}$ is 5 **Ans.** (f) Reciprocal of $\frac{10}{3}$ is $\frac{3}{10}$ **Ans.**

(g) Reciprocal of $5\frac{1}{2}$ or $\frac{11}{2}$ is $\frac{2}{11}$ **Ans.**

(h) Reciprocal of $\frac{12}{5}$ is $\frac{5}{12}$ **Ans.**

(i) Reciprocal of $8\frac{2}{3}$ or $\frac{26}{3}$ is $\frac{3}{26}$ **Ans.**

2. (a) $\frac{5}{6}$ of $24 = \frac{5}{6} \times 24 = 5 \times 4 = 20$ **Ans.**

(b) One week = 7 days; $\frac{2}{7} \times 7 = 2 \times 1 = 2$ **Ans.**

(c) $\frac{5}{6}$ of 54 litres $= \frac{5}{6} \times 54\,l = 5 \times 9\,l = 45\,l$ **Ans.**

(d) $\frac{1}{7}$ of $42 = \frac{1}{7} \times 42 = 1 \times 6 = 6$ **Ans.**

(e) $\frac{1}{19}$ of $1900 = \frac{1}{19} \times 1900 = 1 \times 100 = 100$ **Ans.**

(f) $\frac{1}{2} \times$ ` $20 = 1 \times$ ` $10 =$ ` 10 **Ans.**

(g) $\frac{2}{9}$ of $27 = \frac{2}{9} \times 27 = 2 \times 3 = 6$ **Ans.**

(h) $\frac{3}{7}$ of ₹ $35 = \frac{3}{7} \times$ ₹ $35 = 3 \times$ ₹ $5 =$ ₹ 15 **Ans.**

(i) $\frac{1}{5}$ of a litre $= \frac{1}{5} \times 1000$ ml $= 200$ ml [$\because$ 1 litre $= 1000$ ml] **Ans.**

(j) $\frac{1}{5}$ of $20 = \frac{1}{5} \times 20 = 1 \times 4 = 4$ **Ans.**

(k) $\frac{1}{10}$ of $1000 = \frac{1}{10} \times 1000 = 1 \times 100 = 100$ **Ans.**

(l) $\frac{1}{10}$ of ₹ $1 = \frac{1}{10} \times 100$ paise $= 1 \times 10$ paise $= 10$ paise

[$\because$ ₹ $1 = 100$ paise] **Ans.**

(m) $\frac{3}{4}$ of $40 = \frac{3}{4} \times 40 = 3 \times 10 = 30$ **Ans.**

(n) $\frac{1}{5}$ of $225 = \frac{1}{5} \times 225 = 1 \times 45 = 45$ **Ans.**

(o) $\frac{3}{4}$ of 72 kg $= \frac{3}{4} \times 72$ kg $= 3 \times 18$ kg $= 54$ kg **Ans.**

3. Cost of a pencil-rubber = ₹ $\frac{3}{5}$

Cost of 10 pencil-rubbers = ₹ $\frac{3}{5} \times 10$ = ₹ 3×2 = ₹ 6

Hence, cost of 10 pencil-rubbers = ₹ 6 **Ans.**

4. The cost of a cricket-ball = ₹ $2\frac{1}{4}$ = ₹ $\frac{9}{4}$

The cost of 12 cricket-balls = ₹ $\frac{9}{4} \times 12$ = ₹ 9×3 = ₹ 27

Hence, the cost of 12 cricket-balls = ₹ 27 **Ans.**

5. Total sweets $= 30$

Sweets he given to his younger brother $= \frac{1}{3} \times 30 = 10$

Hence, Nitin gave 10 sweets his younger brother. **Ans.**

6. Money spent monthly $= \frac{1}{3} \times$ ₹ 1290 = ₹ 430

Money spent in one year $= 12 \times$ ₹ 430 = ₹ 5160

Hence, ₹ 5160 spent in one year. **Ans.**

7. Product $= 5\frac{1}{4} \times 30\frac{1}{2} = \frac{21}{4} \times \frac{61}{2} = \frac{1281}{8} = 160\frac{1}{8}$ **Ans.**

Exercise 13 C

1. (a) $\frac{7}{9} \div 7 = \frac{7}{9} \times \frac{1}{7} = \frac{1}{9} \times \frac{1}{1} = \frac{1}{9}$ **Ans.**

(b) $4\frac{1}{2} \div 6 = \frac{9}{2} \times \frac{1}{6} = \frac{3}{2} \times \frac{1}{2} = \frac{3}{4}$ **Ans.**

(c) $2\frac{1}{2} \div 4\frac{1}{4} = \frac{5}{2} \times \frac{4}{17} = \frac{5 \times 2}{1 \times 17} = \frac{10}{17}$ **Ans.**

(d) $\frac{10}{21} \div \frac{5}{6} = \frac{10}{21} \times \frac{6}{5} = \frac{2}{7} \times \frac{2}{1} = \frac{4}{7}$ **Ans.**

(e) $\frac{2}{3} \div 3\frac{1}{5} = \frac{2}{3} \times \frac{5}{16} = \frac{1}{3} \times \frac{5}{8} = \frac{1 \times 5}{3 \times 8} = \frac{5}{24}$ **Ans.**

(f) $5\frac{3}{4} \div 23 = \frac{23}{4} \times \frac{1}{23} = \frac{1}{4} \times \frac{1}{1} = \frac{1}{4}$ **Ans.**

(g) $9 \div \frac{1}{3} = 9 \times 3 = 27$ **Ans.**

(h) $3\frac{3}{4} \div 1\frac{1}{4} = \frac{15}{4} \times \frac{4}{5} = \frac{3}{1} \times \frac{1}{1} = 3$ **Ans.**

(i) $\frac{8}{15} \div \frac{15}{4} = \frac{2}{1} \times \frac{1}{1} = 2$ **Ans.**

2. (a) $\frac{8}{15} \div \frac{4}{3} = \frac{8}{15} \times \frac{3}{4} = \frac{2}{5} \times \frac{1}{1} = \frac{2}{5}$ **Ans.**

(b) $2\frac{2}{3} \div 1\frac{1}{3} = \frac{8}{3} \times \frac{3}{4} = \frac{2}{1} \times \frac{1}{1} = 2$ **Ans.**

(c) $10\frac{1}{5} \div 4\frac{1}{4} = \frac{51}{5} \times \frac{4}{17} = \frac{3}{5} \times 4 = \frac{12}{5} = 2\frac{2}{5}$ **Ans.**

(d) $\frac{6}{7} \div \frac{5}{6} = \frac{6}{7} \times \frac{6}{5} = \frac{6 \times 6}{7 \times 5} = \frac{36}{35} = 1\frac{1}{35}$ **Ans.**

(e) $2\frac{1}{4} \div 1\frac{1}{5} = \frac{9}{4} \times \frac{5}{6} = \frac{3}{4} \times \frac{5}{2} = \frac{15}{8} = 1\frac{7}{8}$ **Ans.**

(f) $9\frac{3}{25} \div 2\frac{2}{5} = \frac{228}{25} \times \frac{5}{12} = \frac{19}{5} \times \frac{1}{1} = \frac{19}{5} = 3\frac{4}{5}$ **Ans.**

3. Total seats = 700

Filled seats = 700 of $\frac{3}{4} = 700 \times \frac{3}{4} = 175 \times 3 = 525$

Hence, 525 seats are filled. **Ans.**

4. Total length of piece $= 16\frac{1}{2}$ m $= \frac{33}{2}$ m

Number of pieces $= \frac{33}{2} \div 2\frac{3}{4} = \frac{33}{2} \div \frac{11}{4} = \frac{33}{2} \times \frac{4}{11} = \frac{3}{1} \times \frac{2}{1} = 6$

Hence, the number of pieces = 6 **Ans.**

5. Number of days $= 22 \div 3\frac{1}{7} = 22 \div \frac{22}{7} = 22 \times \frac{7}{22} = 7$

Hence, number of days = 7 **Ans.**

6. Distance cover in one hour $= 10\frac{1}{2} \div 1\frac{3}{4} = \frac{21}{2} \div \frac{7}{4} = \frac{21}{2} \times \frac{4}{7} = 6\,\text{km}$

Hence, student hike 6 km in one hour. **Ans.**

7. Total page $= 200$

Mohan read the pages $= \frac{1}{5}$ of $200 = 200 \times \frac{1}{5} = 40$

Hence, 40 pages he read. **Ans.**

8. Cost of 16 books = ₹ 40

Cost of 1 book = ₹ $(40 \div 16)$ = ₹ $\frac{40}{16}$ = ₹ $\frac{5}{2}$ = ₹ $2\frac{1}{2}$

Hence, the cost of 1 book is ₹ $2\frac{1}{2}$. **Ans.**

9. The number $= 30\frac{1}{2} \div 5\frac{1}{4} = \frac{61}{2} \div \frac{21}{4} = \frac{61}{2} \times \frac{4}{21} = \frac{61 \times 2}{21} = \frac{122}{21} = 5\frac{17}{21}$

Hence, the number is $5\frac{17}{21}$ **Ans.**

10. Length of ribbon each girl got $37\frac{1}{2}\,\text{m} \div 15 = \frac{75}{2} \times \frac{1}{15}\,\text{m} = \frac{5}{2}\,\text{m} = 2\frac{1}{2}\,\text{m}$

Hence, the length of ribbon each girl get $= 2\frac{1}{2}\,\text{m}$ **Ans.**

11. Product of two numbers $= 3\frac{1}{2}$

One Number = 7

The other number $= 3\frac{1}{2} \div 7 = \frac{7}{2} \times \frac{1}{7} = \frac{1}{2}$

Hence, the other number is $\frac{1}{2}$. **Ans.**

12. One tin hold $= 5\frac{1}{4}\,l$ and 8 tins hold $= 5\frac{1}{4} \times 8\,l = \frac{21}{4} \times 8\,l = 42\,l$

Hence, 8 tins hold $= 42\,l$ **Ans.**

Skill Test-2

1. All factors of

(a) $54 = 1 \times 54 = 2 \times 27 = 3 \times 18 = 6 \times 9$

Hence, the factors of 54 = 1, 2, 3, 6, 9, 18, 27, 54 **Ans.**

(b) $84 = 1 \times 84 = 2 \times 42 = 7 \times 12 = 4 \times 21 = 3 \times 28 = 6 \times 14$

Hence, the factors of 84 = 1, 2, 3, 4, 6, 7, 12, 14, 21, 28, 42, 84 **Ans.**

(c) $144 = 1 \times 144 = 2 \times 72 = 3 \times 48 = 12 \times 12 = 16 \times 9 = 18 \times 8 = 36 \times 4$

Hence, the factors of 144 = 1 2 3 4 6 8 9 12 16 18 24 36 48 72 144 **Ans.**

(d) $196 = 1 \times 196 = 2 \times 98 = 4 \times 49 = 7 \times 28 = 14 \times 14$

Hence, the factors of 196 = 1, 2, 4, 7, 14, 28, 49, 98, 196 **Ans.**

2. 351, 2052, 3735

3. (a)

3	9, 12
	3, 4

Hence, the H.C.F. of 9 and 12 = 3 **Ans.**

(b)

5	15, 25
	3, 5

Hence, the H.C.F. of 15 and 25 = 5 **Ans.**

(c)

2	18, 24
3	9, 12
	3, 4

Hence, the H.C.F. of 18 and $24 = 2 \times 3 = 6$ **Ans.**

(d)

2	20, 28
2	10, 14
	5, 7

Hence, the H.C.F. of 20 and $28 = 2 \times 2 = 4$ **Ans.**

(e)

	9, 5
5	45, 25

Hence, the H.C.F. of 45 and 25 = 5 **Ans.**

(f)

3	54, 81
3	18, 27
3	6, 9
	2, 3

Hence, the H.C.F. of 54 and $81 = 3 \times 3 \times 3 = 27$ **Ans.**

4. (a)

3	3, 5
5	1, 5
	1, 1

Hence, the L.C.M. of 3 and $5 = 3 \times 5 = 15$ **Ans.**

(b)

5	5, 6
6	1, 6
	1, 1

Hence, the L.C.M. of 5 and $6 = 5 \times 6 = 30$ **Ans.**

(c)

5	10, 15
3	2, 3
2	2, 1
	1, 1

Hence, the L.C.M. of 10 and $15 = 5 \times 3 \times 2 = 30$ **Ans.**

(d)

2	12, 16
2	6, 8
2	3, 4
2	3, 2
3	3, 1
	1, 1

Hence, the L.C.M. of 12 and $16 = 2 \times 2 \times 2 \times 2 \times 3 = 48$ **Ans.**

5. (a) 20 **Ans.** (b) 21, 35, 49 **Ans.**

6. The prime numbers are 7, 17, 37, 47, 67, 97.

7. (a) Composite numbers are 21, 32, 81 and 91.
(b) Composite numbers are 63 and 93.

8. (a) 21 (b) 69 (c) 49 (d) 244

9. (a) descending order are $\frac{15}{13} > \frac{12}{13} > \frac{9}{13}$ **Ans.**

(b) L.C.M. of 14, 11, 9 and 16 is 11088.

$$\therefore \frac{7}{14} = \frac{7 \times 792}{14 \times 792} = \frac{5544}{11088}; \quad \frac{7}{11} = \frac{7 \times 1008}{11 \times 1008} = \frac{7056}{11088}$$

$$\frac{7}{9} = \frac{7 \times 1232}{9 \times 1232} = \frac{8624}{11088}; \quad \frac{7}{16} = \frac{7 \times 693}{16 \times 693} = \frac{4851}{11088}$$

Descending order are $\frac{8624}{11088} > \frac{7056}{11088} > \frac{5544}{11088} > \frac{4851}{11088}$

Hence, descending order are $\frac{7}{9} > \frac{7}{11} > \frac{7}{14} > \frac{7}{16}$ **Ans.**

10. (a) Ascending order are $\frac{3}{7} < \frac{4}{7} < \frac{5}{7} < \frac{6}{7}$ **Ans.**

(b) L.C.M. of 7, 12, 5, 8 and 3 is 840.

$\therefore \frac{2}{7} = \frac{2\times120}{7\times120} = \frac{240}{840}$; $\frac{2}{12} = \frac{2\times70}{12\times70} = \frac{140}{840}$;

$\frac{2}{5} = \frac{2\times168}{5\times168} = \frac{336}{840}$; $\frac{2}{8} = \frac{2\times105}{8\times105} = \frac{110}{840}$; $\frac{2}{3} = \frac{2\times280}{3\times280} = \frac{560}{840}$

Ascending order are $\frac{110}{840} < \frac{140}{840} < \frac{240}{840} < \frac{336}{840} < \frac{560}{840}$

Hence, ascending order are $\frac{2}{8} < \frac{2}{12} < \frac{2}{7} < \frac{2}{5} < \frac{2}{3}$. **Ans.**

11. (a) $3\frac{3}{4} = \frac{(3\times4)+3}{4} = \frac{12+3}{4} = \frac{15}{4}$ **Ans.**

(b) $9\frac{3}{8} = \frac{(9\times8)+3}{8} = \frac{72+3}{8} = \frac{75}{8}$ **Ans.**

(c) $4\frac{7}{15} = \frac{(4\times15)+7}{15} = \frac{60+7}{15} = \frac{67}{15}$ **Ans.**

(d) $3\frac{7}{15} = \frac{(3\times15)+7}{15} = \frac{45+7}{15} = \frac{52}{15}$ **Ans.**

12. (i) (b) 12136 (ii) (b) 57 (iii) (a) $\frac{5}{6}$

(iv) (a) $\frac{4}{9}$ (v) (c) improper fraction (vi) (b) $\frac{3}{10}$

(vii) (b) three tenths (viii) (d) $2\times2\times2\times3$

14. Number Patterns

Exercise 14

1. (a) 25, 23, 21, 19, 17, 15, 13, 11, 9, 7, 5
(b) 1, 4, 7, 10, 13, 16, 19, 22, 25, 28, 31, 34
(c) 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
(d) 1, 2, 4, 7, 11, 16, 22, 29, 37, 46, 56, 67

2. (a) multiple of 4 (b) multiple of 3 (c) multiple of 5

3. $189 + 190 + 191 = 190 \times 3 = 570$

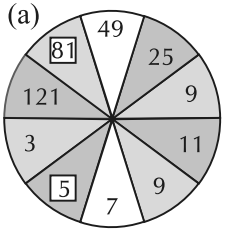
4. (a) $51 \times 51 = 2601$ (b) $61 \times 61 = 3721$ (c) $81 \times 81 = 6561$

5. $74 + 75 + 76 + 77 = 302$

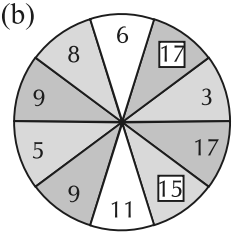
6.

Number of triangles	1	2	3	4	5	6	9	15
Number of vertices	3	4	5	6	7	8	11	17

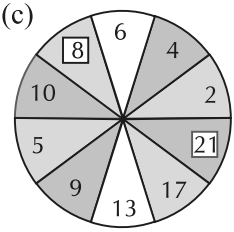
7. (a)



(b)

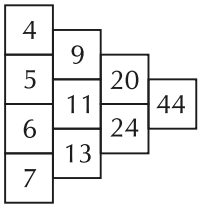


(c)



8. (a) $55555 \times 5 = 277775$
(b) $555555 \times 5 = 2777775$

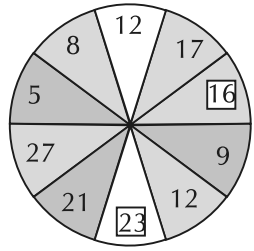
9. (a)



(b)

18	20	22	24
15	17	19	21
12	14	16	18
9	11	13	15

(c)



15. Decimals

Exercise 15 A

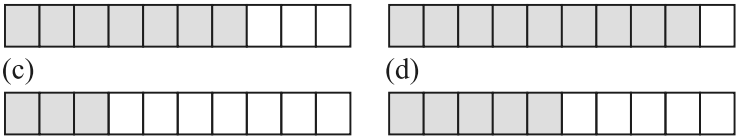
1. (a) Fraction of shaded part $= \frac{8}{10} = 0.8$

(b) Fraction of shaded part $= \frac{4}{10} = 0.4$

(c) Fraction of shaded part $= \frac{5}{10} = 0.5$

(d) Fraction of shaded part $= \frac{3}{10} = 0.3$

2. (a) (b)



(c) (d)

Exercise 15 B

1. (a) 212.067 = Two hundred twelve point zero six seven.
(b) 8.6 = Eight point six.
(c) 7.48 = Seven point four eight.
(d) 0.001 = Zero point zero zero one.
(e) 0.3 = Zero point three
(f) 0.5 = Zero point five (g) 0.33 = Zero point three three
(h) 0.48 = Zero point four eight
(i) 0.006 = Zero point zero zero six
(j) 0.009 = Zero point zero zero nine
(k) 8.05 = Eight point zero five
(l) 54.42 = Fifty four point four two.

2. (a) Eleven point four three = 11.43
(b) Two point four three two = 2.432
(c) Zero point five = 0.5 (d) one decimal six = 1.6
(e) One point zero zero three = 1.003
(f) point seven = .7

3. (a) $5\frac{1}{100} = \frac{501}{100} = 5.01$ **Ans.** (b) $\frac{141}{100} = 1.41$ **Ans.**

(c) $\frac{5}{1000} = 0.005$ **Ans.**

(d) $13\frac{13}{1000} = \frac{13013}{1000} = 13.013$ **Ans.**

(e) $\frac{8}{10} = 0.8$ **Ans.** (f) $\frac{6}{10} = 0.6$ **Ans.** (g) $\frac{8}{100} = 0.08$ **Ans.**

(h) $\frac{12}{100} = 0.12$ **Ans.** (i) $\frac{31}{100} = 0.31$ **Ans.**

(j) $\frac{1}{1000} = 0.001$ **Ans.**

(k) $\frac{10}{1000} = 0.01$ **Ans.** (l) $\frac{555}{1000} = 0.555$ **Ans.**

4. (a) $5.5 = \frac{55}{10} = \frac{11}{2} = 5\frac{1}{2}$ **Ans.** (b) $4.03 = \frac{403}{100} = 4\frac{3}{100}$ **Ans.**

(c) $12.5 = \frac{125}{10} = \frac{25}{2} = 12\frac{1}{2}$ **Ans.** (d) $9.007 = \frac{9007}{1000} = 9\frac{7}{1000}$ **Ans.**

(e) $0.002 = \frac{2}{1000} = \frac{2}{500} = \frac{1}{250}$ **Ans.** (f) $0.03 = \frac{3}{100} = \frac{3}{100}$ **Ans.**

(g) $0.004 = \frac{4}{1000} = \frac{2}{500} = \frac{1}{250}$ **Ans.** (h) $0.8 = \frac{8}{10} = \frac{4}{5}$ **Ans.**

5. (a) 5.45 = 5 ones, 4 tenths and 5 hundredths together.

(b) 0.31 = 0 ones, 3 tenths and 1 hundredths together.

(c) 3.72 = 3 ones, 7 tenths and 2 hundredths together.

(d) 24.589 = 2 tens, 4 ones, 5 tenths, 8 hundredths, and 9 thousandths together.

(e) 0.01 = 0 ones, 0 tenths and 1 hundredths together.

6. (a) Place value of 3 at tenth place $= 3 \times \frac{1}{10} = \frac{3}{10} = 0.3$

Place value of 1 at hundredth place $= 1 \times \frac{1}{100} = \frac{1}{100} = 0.01$

(b) Place value of 0 at tenth place $= 0 \times \frac{1}{10} = \frac{0}{10} = 0$

Place value of 0 at hundredth place $= 0 \times \frac{1}{100} = \frac{0}{100} = 0$

Place value of 1 at thousands place $= 1 \times \frac{1}{1000} = \frac{1}{1000} = 0.001$

(c) Place value of 1 at tenths place $= 1 \times \frac{1}{10} = \frac{1}{10} = 0.1$

Place value of 1 at hundredths place $= 1 \times \frac{1}{100} = \frac{1}{100} = 0.01$

(d) Place value of 1 at tens place $= 1 \times 10 = 10$

Place value of 9 at ones place $= 9 \times 1 = 9$

Place value of 0 at tenths place $= 0 \times \frac{1}{10} = 0$

Place value of 5 at hundredths place $= 5 \times \frac{1}{100} = \frac{5}{100} = 0.05$

(e) Place value of 5 at ones place $= 5 \times 1 = 5$

Place value of 4 at tenths place $= 4 \times \frac{1}{10} = \frac{4}{10} = 0.4$

(f) Place value of 1 at ones place $= 1 \times 1 = 1$

Place value of 3 at tens place $= 3 \times 10 = 30$

Place value of 1 at hundreds place $= 1 \times 100 = 100$

Place value of 7 at tenths place $= 7 \times \frac{1}{10} = \frac{7}{10} = 0.7$

Place value of 8 at hundredth place $= 8 \times \frac{1}{100} = \frac{8}{100} = 0.08$

Place value of 4 at thousandths place

$$= 4 \times \frac{1}{1000} = \frac{4}{1000} = 0.004$$

(g) Place value of 5 at ones place $= 5 \times 1 = 5$

Place value of 6 at tenths place $= 6 \times \frac{1}{10} = \frac{6}{10} = 0.6$

Place value of 7 at hundreds place $= 7 \times \frac{1}{100} = \frac{7}{100} = 0.07$

Place value of 8 at thousandths place

$$= 8 \times \frac{1}{1000} = \frac{8}{1000} = 0.008$$

(h) Place value of 0 at tenths place $= \frac{0}{10} = 0$

Place value of 2 at hundredths place $= 2 \times \frac{1}{100} = \frac{2}{100} = 0.02$

(i) Place value of 8 at ones place $= 8 \times 1 = 8$

Place value of 7 at tenths place $= 7 \times \frac{1}{10} = \frac{7}{10} = 0.7$

7. (a) $4.607 = 4 + \frac{6}{10} + \frac{0}{100} + \frac{7}{1000}$

(b) $34.981 = 30 + 4 + \frac{9}{10} + \frac{8}{100} + \frac{1}{1000}$

(c) $4.04 = 4 + \frac{0}{10} + \frac{4}{100}$ (d) $0.33 = \frac{3}{10} + \frac{3}{100}$

8. (a) $.1 = 0.1$ (b) $0.5 > 0.05$ (c) $3.9 > 3.8$
(d) $0.3 < 0.4$ (e) $6.71 > 6.7$ (f) $0.05 < 0.50$
(g) $4.5 < 5.4$ (h) $0.69 > 0.68$ (i) $8.9 < 8.94$
(j) $0.9 < 9.0$

9. (a) $500 + 60 + 5 + \frac{8}{10} + \frac{1}{100} + \frac{2}{1000}$

$= 500 + 60 + 5 + 0.8 + 0.01 + 0.002 = 565.812$ **Ans.**

(b) $\frac{3}{10} + \frac{2}{100} = 0.3 + 0.02 = 0.32$ **Ans.**

(c) $4 + \frac{1}{10} + \frac{5}{100} = 4 + 0.1 + 0.05 = 4.15$ **Ans.**

10. (a) $31.005 = 30 + 1 + \frac{5}{1000}$ **Ans.**

(b) $13.323 = 10 + 3 + \frac{3}{10} + \frac{2}{100} + \frac{3}{1000}$ **Ans.**

(c) $9.05 = 9 + \frac{5}{100}$ **Ans.** (d) $4.11 = 4 + \frac{1}{10} + \frac{1}{100}$ **Ans.**

16. Unitary Method

Exercise 16

1. The cost of 12 pens = ₹ 48

The cost of 1 pen = ₹ $48 \div 12$ = ₹ 4

∴The cost of 15 pens = ₹ 4×15 = ₹ 60

Hence, the cost of 15 pens = ₹ 60 **Ans.**

2. Cost of one dozen (12) balls = ₹ 36

Cost of 1 ball = ₹ $36 \div 12$ = ₹ 3

∴The cost of 16 balls = ₹ 3×16 = ₹ 48

Hence, the cost of 16 balls = ₹ 48 **Ans.**

3. Cost of 5 litres kerosene = ₹ 85

Cost of 1 litre kerosene = ₹ $85 \div 5$ = ₹ 17

∴Cost of 8 litres kerosene = ₹ 17×8 = ₹ 136

Hence, the cost of 8 litres kerosene = ₹ 136 **Ans.**

4. Cost of 4 kg wheat = ₹ 60

Cost of 1 kg wheat = ₹ $60 \div 4$ = ₹ 15
$\therefore$ Cost of 10 kg wheat = ₹ 15×10 = ₹ 150
Hence, the cost of 10 kg wheat = ₹ 150 **Ans.**

5. Cost of 10 kg sugar = ₹ 90

Cost of 1 kg sugar = ₹ $90 \div 10$ = ₹ 9
$\therefore$ The cost of 4 kg sugar = ₹ 9×4 = ₹ 36
Hence, the cost of 4 kg sugar = ₹ 36 **Ans.**

6. A bicycle rider goes in 5 hours = 35 km
A bicycle rider goes in 1 hours = 35 km $\div 5$ = 7 km
$\therefore$ A bicycle rider goes in 3 hours = 7 km $\times 3$ = 21 km
Hence, a bicycle rider goes in 3 hours = 21 km **Ans.**

7. Wheat in 15 sacks = 435 kg
Wheat in 1 sack = 435 kg $\div 15$ = 29 kg
$\therefore$ Wheat in 7 sacks = 29 kg $\times$ 7 = 203 kg
Hence, 203 kg wheat in 7 sacks contain. **Ans.**

8. Cost of 8 m cloth = ₹ 176

Cost of 1 m cloth = ₹ $176 \div 8$ = ₹ 22
$\therefore$ Cost of 5 m cloth = ₹ 22×5 = ₹ 110
Hence, the cost of 5 m cloth = ₹ 110 **Ans.**

9. Distance covered in 3 hours = 219 km
Distance covered in 1 hour = 219 km $\div$ 3 = 73 km
$\therefore$ Distance covered in 8 hours = 73 km $\times$ 8 = 584 km
Hence, the distance covered in 8 hours = 584 km **Ans.**

10. Cost of 5 bundles of sticks = ₹ 80

Cost of 1 bundle of sticks = ₹ $80 \div 5$ = ₹ 16
$\therefore$ Cost of 3 bundles of sticks = ₹ 16×3 = ₹ 48
Hence, the cost of 3 bundles of sticks = ₹ 48 **Ans.**

11. Toys makes in 9 days = 279
Toys makes in 1 days = $279 \div 9 = 31$
$\therefore$ Toys makes in 6 days = $31 \times 6 = 186$
Hence, 186 toys she make in 6 days. **Ans.**

12. 20 trucks can carry bags = 5000
1 truck can carry bag = $5000 \div 20 = 250$
$\therefore$ 7 trucks can carry bags = $250 \times 7 = 1750$
Hence, 1750 bags of cement carried in 7 trucks. **Ans.**

13. A factory produced screws in 3 days $= 3750$
A factory produced screw in 1 day $= 3750 \div 3 = 1250$
$\therefore$A factory produced screws in 21 days $= 1250 \times 21 = 26250$
Hence, 26250 screws produced in 21 days. **Ans.**

14. Distance covered in 14 hours $= 1540$ km
Distance covered in 1 hour $= 1540$ km $\div 14 = 110$ km
$\therefore$Distance covered in 8 hours $= 110$ km $\times 8 = 880$ km
Hence, 880 km aircraft go in 8 hours. **Ans.**

15. Bottles in 4 crates $= 80$
Bottles in 1 crate $= 80 \div 4 = 20$
$\therefore$Bottles in 12 crates $= 20 \times 12 = 240$
Hence, 240 bottles in 12 crates. **Ans.**

16. Cost of 15 kg of vegetables oil = ` 465
Cost of 1 kg of vegetable oil = ₹ $465 \div 15$ = ₹ 31
$\therefore$Cost of 4 kg of vegetable oil = ₹ 31×4 = ₹ 124
Hence, the cost of 4 kg of vegetable oil = ₹ 124 **Ans.**

17. Cost of 1 quintal or 100 kg of rice = ` 700
Cost of 1 kg of rice = ₹ $700 \div 100$ = ₹ 7
$\therefore$Cost of 40 kg of rice = ₹ 7×40 = ₹ 280
Hence, the cost of 40 kg of rice = ₹ 280 **Ans.**

18. Cost of 12 cricket balls = ₹ 36
Cost of 1 cricket ball = ₹ $36 \div 12$ = ₹ 3
$\therefore$Cost of 5 cricket balls = ₹ 3×5 = ₹ 15
Hence, the cost of 5 cricket balls = ₹ 15 **Ans.**

19. Car travels in 4 hours $= 180$ km
Car travels in 1 hour $= 180$ km $\div 4 = 45$ km
$\therefore$Car travels in 3 hours $= 45$ km $\times 3 = 135$ km
Hence, 135 km car travel in 3 hours. **Ans.**

20. The rent of house for a year = ₹ 2400

The rent of house for 1 month = ₹ $\frac{2400}{12}$ [1 year $= 12$ month]

= ₹ 200
$\therefore$The rent of house for 3 months = ₹ 200×3 = ₹ 600
Hence, the rent of house for 3 months = ₹ 600 **Ans.**

17. Measures

Exercise 17 A

1. (a) 10 (b) 100 (c) 1000 (d) 1000 (e) 1000 (f) 1000
(g) 100 (h) 100 (i) 10

2. (a) $7\text{ cm }7\text{ mm} = 7\text{ cm} + 7\text{ mm} = 7 \times 10\text{ mm} + 7\text{ mm} = 70\text{ mm} + 7\text{ mm} = 77\text{ mm}$ **Ans.**

(b) $5\text{ m }6\text{ cm} = 5 \times 100\text{ cm} + 6\text{ cm} = 500\text{ cm} + 6\text{ cm} = 506\text{ cm}$ **Ans.**

(c) $90\text{ m }18\text{ cm} = 90 \times 100\text{ cm} + 18\text{ cm} = 9000\text{ cm} + 18\text{ cm} = 9018\text{ cm}$ **Ans.**

(d) $16\text{ cm }3\text{ mm} = 16 \times 10\text{ mm} + 3\text{ mm} = 160\text{ mm} + 3\text{ mm} = 163\text{ mm}$ **Ans.**

(e) $10\text{ kg }12\text{ g} = 10 \times 1000\text{ g} + 12\text{ g} = 10000\text{ g} + 12\text{ g} = 10012\text{ g}$ **Ans.**

(f) $9\text{ l }20\text{ ml} = 9 \times 1000\text{ ml} + 20\text{ ml} = 9000\text{ ml} + 20\text{ ml} = 9020\text{ ml}$ **Ans.**

(g) $8\text{ km }345\text{ m} = 8 \times 1000\text{ m} + 345\text{ m} = 8000\text{ m} + 345\text{ m} = 8345\text{ m}$ **Ans.**

(h) $222\text{ kg }42\text{ g} = 222 \times 1000\text{ g} + 42\text{ g} = 222000\text{ g} + 42\text{ g} = 222042\text{ g}$ **Ans.**

(i) $631\ l\ 3\text{ ml} = 631 \times 1000\text{ ml} + 3\text{ ml} = 631000\text{ ml} + 3\text{ ml} = 631003\text{ ml}$ **Ans.**

(j) $312\text{ kg }418\text{ g} = 312 \times 1000\text{ g} + 418\text{ g} = 312000\text{ g} + 418\text{ g} = 312418\text{ g}$ **Ans.**

3. (a) 7 (b) 3 (c) 5 (d) 2 (e) 9 (f) 4

4. (a) $781\text{ cm} = 700\text{ cm} + 81\text{ cm} = \frac{700}{100}\text{ cm} + 81\text{ cm} = 7\text{ m }81\text{ cm}$ **Ans.**

(b) $92\text{ mm} = 90\text{ mm} + 2\text{ mm} = \frac{90}{10}\text{ cm} + 2\text{ mm} = 9\text{ cm }2\text{ mm}$ **Ans.**

(c) $356\text{ mm} = 350\text{ mm} + 6\text{ mm} = \frac{350}{10}\text{ cm} + 6\text{ mm} = 35\text{ cm }6\text{ mm}$ **Ans.**

(d) $4529\text{ g} = 4000\text{ g} + 529\text{ g} = \frac{4000}{1000}\text{ kg} + 529\text{ g} = 4\text{ kg }529\text{ g}$ **Ans.**

(e) $2362\text{ ml} = 2000\text{ ml} + 362\text{ ml} = \frac{2000}{1000}\text{ l} + 362\text{ ml} = 21362\text{ ml}$ **Ans.**

(f) $4002\text{ ml} = 4000\text{ ml} + 2\text{ ml} = \frac{4000}{1000}\ l + 2\text{ ml} = 4\text{ l }2\text{ ml}$ **Ans.**

(g) $1755\text{ m} = 1000\text{ m} + 755\text{ m} = \frac{1000}{1000}\text{ km} + 755\text{ m} = 1\text{ km }755\text{ m}$ **Ans.**

(h) $16725\text{ g} = 16000\text{ g} + 725\text{ g} = \frac{16000}{1000}\text{ kg} + 725\text{ g} = 16\text{ kg }725\text{ g}$ **Ans.**

(i) $1020\text{ cm} = 1000\text{ cm} + 20\text{ cm} = \frac{1000}{100}\text{ m} + 20\text{ cm} = 10\text{ m }20\text{ cm}$ **Ans.**

(j) $22320\text{ m} = 22000\text{ m} + 320\text{ m} = \frac{22000}{1000}\text{ km} + 320\text{ m} = 22\text{ km }320\text{ m}$ **Ans.**

Exercise 17 B

1. (a)

km	m
36	475
15	800
+9	225
61	500

(b)

m	cm
72	25
18	10
+9	50
99	85

(c)

kg	g
2	200
12	900
+78	350
93	450

(d)

l	ml
17	225
9	250
+ 8	400
34	875

2. (a) $6354\text{ ml} = 6000\text{ ml} + 354\text{ ml} = 6\ l\ 354\text{ ml}$

l	ml
12	525
+6	354
18	879

(b) $530\text{ cm} = 500\text{ cm} + 30\text{ cm} = 5\text{ m }30\text{ cm}$

m	cm
5	30
7	20
+2	00
14	50

(c) $8255\text{ m} = 8000\text{ m} + 255\text{ m} = 8\text{ km }255\text{ m}$

km	m
7	200
8	255
+ 9	325
24	780

(d) $7320\text{ g} = 7000\text{ g} + 320\text{ g} = 7\text{ kg }320\text{ g}$

kg	g
8	100
5	120
+ 7	320
20	540

(e) 3250 g = 3000 g + 250 g
= 3 kg 250 g

kg	g
4	140
+3	250
7	390

(f) 950 cm = 900 cm + 50 cm
= 9 m 50 cm

m	cm
2	75
+9	50
12	25

3. (a)

km	m	cm
12	300	50
+14	400	20
26	700	70

(b)

km	m	cm
3	400	25
+ 5	200	80
8	601	05

(c)

km	m	cm
15	100	10
+20	500	40
+70	600	80
106	201	30

(d)

km	m	cm
10	200	30
+40	500	60
+70	600	90
121	301	80

4. (a)

km	m	cm
8	250	65
− 2	150	30
6	100	35

(b)

km	m	cm
36	300	50
−16	800	70
19	499	80

(c)

km	m	cm
17	200	40
−12	100	80
5	099	60

5. (a)

km	m
21	250
− 17	425
3	825

Hence, 21 km 250 m − 17 km 425 m = 3 km 425 m **Ans.**

(b) 7250 m = 7000 m + 250 m = 7 km 250 m

km	m
12	000
− 7	250
4	750

Hence, 12 km − 7250 m = 4 km 750 m **Ans.**

(c)

m	cm
945	80
− 467	35
478	45

Hence, 945 m 80 cm − 467 m 35 cm = 478 m 45 cm **Ans.**

(d)

	l	ml
	42	100
−	29	250
	12	850

Hence, 42 *l* 100 ml − 29 *l* 250 ml = 12 *l* 850 ml **Ans.**

6. (a) 55750 g = 55000 g + 750 g = 55 kg 750 g

	kg	g
	55	750
−	29	319
	26	431

Hence, 55 kg 750 g − 29 kg 319 g = 26 kg 431 g **Ans.**

(b) 7250 m = 7000 m + 250 m = 7 km 250 m

	km	m
	32	000
−	7	250
	24	750

Hence, 32 km − 7250 m = 24 km 750 m **Ans.**

(c) 325 cm = 300 cm + 25 cm = 3 m 25 cm

	m	cm
	5	38
−	3	25
	2	13

Hence, 5 m 38 cm − 3 m 25 cm = 2 m 13 cm **Ans.**

(d) 20875 ml = 20000 ml + 875 ml = 20 *l* 875 ml

	l	ml
	20	875
−	15	650
	5	225

Hence, 20875 ml − 15 *l* 650 ml = 5 *l* 225 ml **Ans.**

Exercise 17 C

1. 85 kg 585 g = 85000 g + 585 g = 85585 g

$$\begin{array}{r} 85585 \\ \times\ 8 \\ \hline 684680 \end{array}$$

Now, 684680 g = 684000 g + 680 g = 684 kg + 680 g = 684 kg 680 g **Ans.**

2. 72 *l* 435 ml = 72000 ml + 435 ml = 72435 ml

$$\begin{array}{r} 72435 \\ \times\ 7 \\ \hline 507045 \end{array}$$

Now, 507045 ml 507000 ml + 45 ml = 507 *l* + 45 ml = 507 l 45 ml **Ans.**

3. 5 m 45 cm = 500 cm + 45 cm = 545 cm

$$\begin{array}{r} 545 \text{ cm} \\ \times\ 6 \\ \hline 3270 \text{ cm} \end{array}$$

Now, 3270 cm = 3200 cm + 70 cm = 32 m + 70 cm = 32 m 70 ml **Ans.**

4. 28 km 350 m = 28000 m + 350 m = 28350 m

$$\begin{array}{r} 28350\ \text{m} \\ \times\ 9 \\ \hline 255150\ \text{m} \end{array}$$

Now, 255150 m = 255000 m + 150 m = 255 km + 150 m = 255 km 150 m **Ans.**

5. 12 kg 125 g = 12000 g + 125 g = 12125 g

$$\begin{array}{r} 12125\ \text{g} \\ \times\ 7 \\ \hline 84875\ \text{g} \end{array}$$

Now, 84875 g = 84000 g + 875 g = 84 kg + 875 g = 84 kg 875 g **Ans.**

6. 21 *l* 225 ml = 21000 ml + 225 ml = 21225 ml

$$\begin{array}{r} 21225\ \text{ml} \\ \times\ 4 \\ \hline 84900\ \text{ml} \end{array}$$

Now, 84900 ml = 84000 ml + 900 ml = 84 *l* + 900 ml = 84 *l* 900 ml

Ans.

7. 12 m 10 cm = 1200 cm + 10 cm = 1210 cm

$$\begin{array}{r} 1210\ \text{cm} \\ \times\ 7 \\ \hline 8470\ \text{cm} \end{array}$$

Now, 8470 cm = 8400 cm + 70 cm = 84 m + 70 cm = 84 m 70 cm

Ans.

8. 18 km 150 m = 18000 m + 150 m = 18150 m

$$\begin{array}{r} 18150\ \text{m} \\ \times\ 6 \\ \hline 108900\ \text{m} \end{array}$$

Now, 108900 m = 108000 m + 900 m = 108 km + 900 m = 108 km 900 m **Ans.**

9. 6 kg 725 g = 6000 g + 725 g = 6725 g

$$\begin{array}{r} 6725\ \text{g} \\ \times\ 14 \\ \hline 26900 \\ 67250 \\ \hline 94150\ \text{g} \end{array}$$

Now, 94150 g = 94000 g + 150 g = 94 kg + 150 g = 94 kg 150 g **Ans.**

10. 5 km 575 m = 5000 m + 575 m = 5575 m

$$\begin{array}{r} 5575\ \text{m} \\ \times\ 13 \\ \hline 16725 \\ 55750 \\ \hline 72475\ \text{m} \end{array}$$

Now, 72475 m = 72000 m + 475 m = 72 km + 475 m = 72 km 475 m **Ans.**

11. 3 m 85 cm = 300 cm + 85 cm = 385 cm

$$\begin{array}{r} 385\ \text{cm} \\ \times\ 12 \\ \hline 770 \\ 3850 \\ \hline 4620\ \text{cm} \end{array}$$

Now, 4620 cm = 4600 cm + 20 cm = 46 m + 20 cm = 46 m 20 cm **Ans.**

12. 7 *l* 825 ml = 7000 ml + 825 ml = 7825 ml

$$\begin{array}{r} 7\,8\,2\,5 \text{ ml} \\ \times\ 1\,5 \\ \hline 3\,9\,1\,2\,5 \\ 7\,8\,2\,5\,0 \\ \hline 1\,1\,7\,3\,7\,5 \text{ ml} \end{array}$$

Now, 117375 ml 117000 ml +375 ml = 117 *l* +350 ml = 117 *l* 375 ml **Ans.**

Exercise 17 D

1. (a) 81 kg 189 g = 81000 g + 189 g = 81189 g

$$\begin{array}{r|l} 9 & 9021 \\ \hline 81189 & \\ -81\downarrow\downarrow\downarrow & \\ \hline 018 & \\ -18\downarrow & \\ \hline 09 & \\ -9 & \\ \hline 0 & \end{array}$$

Now, 9021 g = $\frac{9021}{1000}$ kg = 9.021 kg = 9 kg 21 g **Ans.**

(b) 28 m 64 cm = 2800 cm + 64 cm = 2864 cm

$$\begin{array}{r|l} 4 & 716 \\ \hline 2864 & \\ -28\downarrow & \\ \hline 06 & \\ -4 & \\ \hline 24 & \\ -24 & \\ \hline 0 & \end{array}$$

Now, 716 cm = $\frac{716}{100}$ m = 7.16 m = 7 m 16 cm **Ans.**

(c) 12 *l* 612 ml = 12000 ml + 612 ml = 12612 ml

$$\begin{array}{r|l} 6 & 2102 \\ \hline 12612 & \\ -12\downarrow & \\ \hline 6 & \\ -6 & \\ \hline 012 & \\ -12 & \\ \hline 0 & \end{array}$$

Now, 2102 ml = $\frac{2102}{1000}$ *l* = 2 *l* 102 ml **Ans.**

(d) 35 km 749 m = 35000 m + 749 m = 35749 m

$$\begin{array}{r|l} 7 & 5107 \\ \hline 35749 & \\ -35\downarrow & \\ \hline 7 & \\ -7 & \\ \hline 49 & \\ -49 & \\ \hline 0 & \end{array}$$

Now, 5107 m = $\frac{5107}{1000}$ km = 5.107 km = 5 km 107 m **Ans.**

2. (a) 89 *l* 40 ml = 89000 ml + 40 ml = 89040 ml

$$\begin{array}{r|l} 42 & 2120 \\ \hline 89040 & \\ -84\downarrow & \\ \hline 50 & \\ -42 & \\ \hline 84 & \\ -84 & \\ \hline 00 & \end{array}$$

Now, 2120 ml $= \frac{2120}{1000}\ l$

$= 2.120\ l = 2\ l\ 120$ ml **Ans.**

(b) 779 m 59 cm = 77900 cm + 59 cm = 77959 cm

$$\begin{array}{r} 2107 \\ 37\overline{)\ 7\ 7\ 9\ 5\ 9} \\ -7\ 4\downarrow\ \downarrow\ \downarrow \\ \hline 3\ 9\ \downarrow\ \downarrow \\ -3\ 7\downarrow\ \downarrow \\ \hline 2\ 5\ 9 \\ -2\ 5\ 9 \\ \hline 0 \end{array}$$

Now, 2107 cm $= \frac{2107}{100}$ m

$= 21.07$ m $= 21$ m 7 cm **Ans.**

(c) 281 km 862 m = 281000 m + 862 m = 281862 m

$$\begin{array}{r} 20133 \\ 14\overline{)\ 2\ 8\ 1\ 8\ 6\ 2} \\ -2\ 8\downarrow\ \downarrow\ \downarrow\ \downarrow \\ \hline 1\ 8\ \downarrow\ \downarrow\ \downarrow \\ -1\ 4\downarrow\ \downarrow\ \downarrow \\ \hline 4\ 6\ \downarrow\ \downarrow \\ -4\ 2\downarrow\ \downarrow \\ \hline 4\ 2\ \downarrow \\ -4\ 2 \\ \hline 0 \end{array}$$

Now, 20133 m $= \frac{20133}{1000}$ km

$= 20.133$ km $= 20$ km 133 m **Ans.**

(d) 155 kg 64 g = 155000 g + 64 g = 155064 g

$$\begin{array}{r} 3976 \\ 39\overline{)\ 1\ 5\ 5\ 0\ 6\ 4} \\ -1\ 1\ 7\downarrow\ \downarrow\ \downarrow \\ \hline 3\ 8\ 0\ \downarrow\ \downarrow \\ -3\ 5\ 1\downarrow\ \downarrow \\ \hline 2\ 9\ 6\ \downarrow \\ -2\ 7\ 3\downarrow \\ \hline 2\ 3\ 4 \\ -2\ 3\ 4 \\ \hline 0 \end{array}$$

Now, 3976 g $= \frac{3976}{1000}$ kg

$= 3.976$ kg $= 3$ kg 976 g **Ans.**

(e) 115 l 360 ml = 115000 ml + 360 ml = 115360 ml

$$\begin{array}{r} 7210 \\ 16\overline{)\ 1\ 1\ 5\ 3\ 6\ 0} \\ -1\ 1\ 2\downarrow\ \downarrow\ \downarrow \\ \hline 3\ 3\ \downarrow\ \downarrow \\ -3\ 2\downarrow\ \downarrow \\ \hline 1\ 6\ \downarrow \\ -1\ 6 \\ \hline 0\ 0 \end{array}$$

Now, 7210 ml $= \frac{7210}{1000}\ l$

$= 7.210\ l = 7\ l\ 210$ ml **Ans.**

(f) 218 m 12 cm = 21800 cm + 12 cm = 21812 cm

$$\begin{array}{r} 287 \\ 76\overline{)\ 2\ 1\ 8\ 1\ 2} \\ -1\ 5\ 2\downarrow\ \downarrow \\ \hline 6\ 6\ 1\ \downarrow \\ -6\ 0\ 8\downarrow \\ \hline 5\ 3\ 2 \\ -5\ 3\ 2 \\ \hline 0 \end{array}$$

Now, 287 cm $= \frac{287}{100}$ m $= 2.87$ m $= 2$ m 87 cm **Ans.**

Exercise 17 E

1. Total distance =

km	m
1	3 7 5
5	7 2 5
+ 1 2	1 5 0
1 9	2 5 0

Hence, total distance travelled by Mr. Gupta = 19 km 250 m **Ans.**

2. Total quantity of milk =

l	ml
1 8	6 7 5
6	4 2 5
+ 2 9	5 5 0
5 4	6 5 0

Hence, total quantity of milk = 54 *l* 650 ml **Ans.**

3. Length of silk cloth = 2 m 20 cm
Length of cotton cloth = 925 cm = 9 m 25 cm
Total length of cloth =

m	cm
2	2 0
+ 9	2 5
1 1	4 5

Hence, the total length of cloth Lakshmi bought = 11 m 45 cm **Ans.**

4. Weight of 20 pastries = 20×50 g = 1000 g = 1 kg
Weight of tin and pastries = 1 kg 750 g
$\therefore$ Weight of empty tin = 1 kg 750 g − 1 kg
= 750 g
Hence, the weight of empty tin is 750 g. **Ans.**

5. Total quantity of oil in container = 5 l 250 ml
Total quantity of wasted oil =

2 *l*	100 ml
+ 1 *l*	200 ml
3 *l*	300 ml

$\therefore$ Oil is left =

l	ml
5	2 5 0
− 3	3 0 0
1	9 5 0

Hence, 1 *l* 950 ml oil is left in the container. **Ans.**

6. Height of Ganeshan = 1 m 75 cm
Height of his daughter = 1 m 75 cm − 110 cm = 65 cm

m	cm
1	7 5
−1	1 0
	6 5

Hence, Madhu's height = 65 cm **Ans.**

7. Total paint = 15 *l* 525 ml
Paint each company gave = 15 *l* 525 ml ÷ 5
= (15000 ml + 525 ml) ÷5 = 15525 ml ÷ 5 = 3105 ml = 3 *l* 105 ml
Hence, 3 *l* 105 ml paint each company gave. **Ans.**
3 company gave paint = 3105 ml × 3 = 9315 ml = 9 *l* 315 ml
Hence, 3 company gave 9 l 315 ml pain altogether. **Ans.**

8. Each runner run = 4 km 520 m ÷ 4 = (4000 m + 520 m) ÷4
= 4520 m ÷ 4 = 1130 m = 1 km 130 m
Hence, 1 km 130 m each runner ran. **Ans.**

9. Weight of both heaps = 5 kg 250 g
Weight of one heap = 325 2g = 3 kg 252 g
Other heap weigh = 5 kg 250 g − 3252 g
= 5 kg 250 g − 3 kg 252 g = 1 kg 998 g

=	5 kg 250 g
	− 3 kg 252 g
	1 kg 998 g

Hence, weight of other heap = 1 kg 998 g **Ans.**

10. Dick weighs = 25 kg 250 g = 25250 g
∴Dick's father weighs = 3 × 25250 g = 75750 g = 75 kg 750 g
Hence, Dick's father weighs is 75 kg 750 g **Ans.**

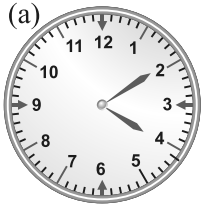
18. Time

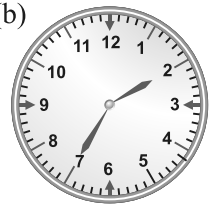
Exercise 18 A

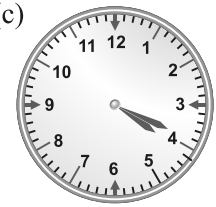
1. (a) 3 : 00 (b) 1 : 40 (c) 9 : 30 (d) 1 : 00 (e) 12 : 10 (f) 6 : 50

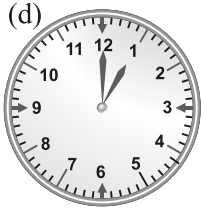
2. (a) 4 : 36 (b) 6 : 15 (c) 9 : 15 (d) 1 : 30 (e) 2 : 40 (f) 11 : 45
(g) 3 : 58 (h) 4 : 20

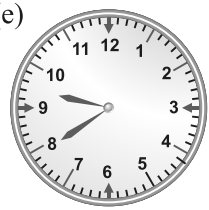
3. (a) 8 : 55 (b) 8 : 34 (c) 3 : 56 (d) 8 : 09 (e) 2 : 33 (f) 2 : 45
(g) 4 : 20

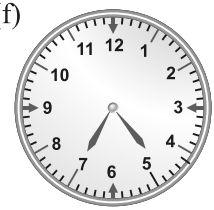
4. (a) 

(b) 

(c) 

(d) 

(e) 

(f) 

Exercise 18 B

1. (a) 6 : 30 am (b) 6 : 30 pm (c) 10 : 30 pm
2. (a) 7 : 20 am (b) 5 : 45 am (c) 9 : 30 am
(d) 4 : 30 am (e) 5 : 00 am
3. (a) 1 : 40 pm (b) 5 : 50 pm (c) 3 : 45 pm
(d) 6 : 00 pm (e) 8 : 45 pm
4. (a) 10 : 30 am (b) 2 : 00 pm (c) 8 : 35 am
(d) 11 : 55 pm (e) 5 : 25 pm
5. (a) 4 : 45 pm (b) 2 : 20 pm (c) 5 : 00 am
(d) 3 : 15 pm (e) 6 : 30 pm
6. (a) pm (b) am (c) pm (d) am (e) pm

Exercise 18 C

1. (a) $3\text{ hr }34\text{ min} = 3\text{ hr} + 34\text{ min} = (3\times 60)\text{ min} + 34\text{ min} = 180\text{ min} + 34\text{ min} = 214\text{ min}$ **Ans.**

(b) $6\text{ hr }44\text{ min} = (6\times 60)\text{ min} + 44\text{ min} = 360\text{ min} + 44\text{ min} = 404\text{ min}$. **Ans.**

(c) $8\text{ hr }17\text{ min} = (8\times 60)\text{ min} + 17\text{ min} = 480\text{ min} + 17\text{ min} = 497\text{ min}$ **Ans.**

(d) $29\text{ hr }27\text{ min} = (29\times 60)\text{ min} + 27\text{ min} = 1740\text{ min} + 27\text{ min} = 1767\text{ min}$ **Ans.**

(e) $20\text{ hr }57\text{ min} = (20\times 60)\text{ min} + 57\text{ min} = 1200\text{ min} + 57\text{ min} = 1257\text{ min}$ **Ans.**

(f) $5\text{ hr }45\text{ min} = (5\times 60)\text{ min} + 45\text{ min} = 300\text{ min} + 45\text{ min} = 345\text{ min}$ **Ans.**

2. (a) $238 \text{ min} = 180 \text{ min} + 58 \text{ min} = \frac{180}{60} \text{ hr} + 58 \text{ min} = 3 \text{ hr } 58 \text{ min}$ **Ans.**

(b) $209 \text{ min} = 180 \text{ min} + 29 \text{ min} = \frac{180}{60} \text{ hr} + 29 \text{ min} = 3 \text{ hr } 29 \text{ min}$ **Ans.**

(c) $179 \text{ min} = 120 \text{ min} + 59 \text{ min} = \frac{120}{60} \text{ hr} + 59 \text{ min} = 2 \text{ hr } 59 \text{ min}$ **Ans.**

(d) $447 \text{ min} = 420 \text{ min} + 27 \text{ min} = \frac{420}{60} \text{ hr} + 27 \text{ min} = 7 \text{ hr } 27 \text{ min}$ **Ans.**

(e) $649 \text{ min} = 600 \text{ min} + 49 \text{ min} = \frac{600}{10} \text{ hr} + 49 \text{ min} = 6 \text{ hr } 49 \text{ min}$ **Ans.**

(f) $359 \text{ min} = 300 \text{ min} + 59 \text{ min} = \frac{300}{60} \text{ hr} + 59 \text{ min} = 5 \text{ hr } 59 \text{ min}$ **Ans.**

3. (a) $25 \text{ minutes} = 25 \times 60 \text{ seconds} = 1500 \text{ seconds}$ **Ans.**

(b) $5 \text{ minutes} = 5 \times 60 \text{ seconds} = 300 \text{ seconds}$ **Ans.**

(c) $6 \text{ minutes} = 6 \times 60 \text{ seconds} = 360 \text{ seconds}$ **Ans.**

(d) $9 \text{ minutes} = 9 \times 60 \text{ seconds} = 540 \text{ seconds}$ **Ans.**

(e) $41 \text{ minutes} = 41 \times 60 \text{ seconds} = 2460 \text{ seconds}$ **Ans.**

(f) $63 \text{ minutes} = 63 \times 60 \text{ seconds} = 3780 \text{ seconds}$ **Ans.**

4. (a) $6 \text{ min } 23 \text{ seconds} = 6 \times 60 \text{ seconds} + 23 \text{ seconds} = 360$ seconds $+ 23 \text{ seconds} = 383 \text{ seconds}$ **Ans.**

(b) $41 \text{ min } 25 \text{ seconds} = 41 \times 60 \text{ seconds} + 25 \text{ seconds} = 2460$ seconds $+ 25 \text{ seconds} = 2485 \text{ seconds}$ **Ans.**

(c) $17 \text{ min } 58 \text{ seconds} = 17 \times 60 \text{ seconds} + 58 \text{ seconds} = 1020$ seconds $+ 58 \text{ seconds} = 1078 \text{ seconds}$ **Ans.**

(d) $52 \text{ min } 22 \text{ seconds} = 52 \times 60 \text{ seconds} + 22 \text{ seconds} = 3120$ seconds $+ 22 \text{ seconds} = 3142 \text{ seconds}$ **Ans.**

(e) $8 \text{ min } 39 \text{ seconds} = 8 \times 60 \text{ seconds} + 39 \text{ seconds} = 480$ seconds $+ 39 \text{ seconds} = 519 \text{ seconds}$ **Ans.**

(f) $7 \text{ min } 49 \text{ seconds} = 7 \times 60 \text{ seconds} + 49 \text{ seconds} = 420$ seconds $+ 49 \text{ seconds} = 469 \text{ seconds}$ **Ans.**

5. (a) $574 \text{ sec} = 540 \text{ sec} + 34 \text{ sec} = \frac{540}{60} \text{ min} + 34 \text{ sec} = 9 \text{ min} + 34$ $\text{sec} = 9 \text{ min } 34 \text{ sec}$ **Ans.**

(b) $549 \text{ sec} = 540 \text{ sec} + 9 \text{ sec} = \frac{540}{60} \text{ min} + 9 \text{ sec} = 9 \text{ min } 9 \text{ sec}$ **Ans.**

(c) $61 \text{ sec} = 60 \text{ sec} + 1 \text{ sec} = \frac{60}{60} \text{ min} + 1 \text{ sec} = 1 \text{ min } 1 \text{ sec}$ **Ans.**

(d) $78 \text{ sec} = 60 \text{ sec} + 18 \text{ sec} = \frac{60}{60} \text{ min} + 18 \text{ sec} = 1 \text{ min } 18 \text{ sec}$ **Ans.**

(e) $200 \text{ sec} = 180 \text{ sec} + 20 \text{ sec} = \frac{180}{60} \text{ min} + 20 \text{ sec} = 3 \text{ min } 20 \text{ sec}$ **Ans.**

(f) $304 \text{ sec} = 300 \text{ sec} + 4 \text{ sec} = \frac{300}{60} \text{ min} + 4 \text{ sec} = 5 \text{ min } 4 \text{ sec}$ **Ans.**

(g) $149 \text{ sec} = 120 \text{ sec} + 29 \text{ sec} = \frac{120}{60} \text{ min} + 29 \text{ sec} = 2 \text{ min } 29 \text{ sec}$ **Ans.**

(h) $212 \text{ sec} = 180 \text{ sec} + 32 \text{ sec} = \frac{180}{60} \text{ min} + 32 \text{ sec} = 3 \text{ min } 32 \text{ sec}$ **Ans.**

(i) $669 \text{ sec} = 660 \text{ sec} + 9 \text{ sec} = \frac{660}{60} \text{ min} + 9 \text{ sec} = 11 \text{ min } 9 \text{ sec}$ **Ans.**

6. (a) $28 \text{ hr} = 28 \times 60 \text{ sec} = 1680 \text{ sec}$ **Ans.**

(b) $13 \text{ hr} = 13 \times 60 \text{ sec} = 780 \text{ sec}$ **Ans.**

(c) $25 \text{ hr} = 25 \times 60 \text{ sec} = 1500 \text{ sec}$ **Ans.**

(d) $33 \text{ hr} = 33 \times 60 \text{ sec} = 1980 \text{ sec}$ **Ans.**

(e) $27 \text{ hr} = 27 \times 60 \text{ sec} = 1620 \text{ sec}$ **Ans.**

(f) $3 \text{ hr} = 3 \times 60 \text{ sec} = 180 \text{ sec}$ **Ans.**

Exercise 18 D

1. (a)

	hr	min
		27
+	18	24
	18	51

Hence, 27 min + 18 hr 24 min = 18 hr 51 min **Ans.**

(b)

	hr	min
		35
+	6	17
	6	52

Hence, 35 min + 6 hr 17 min = 6 hr 52 min **Ans.**

(c)

	hr	min
	6	34
+	8	44
	14	78

Hence, 6 hr 34 min + 8 hr 44 min = 14 hr 78 min **Ans.**

(d)

	hr	min
	3	16
+	5	49
	8	65

Hence, 3 hr 16 min + 5 hr 49 min = 8 hr 65 min = 8 hr + 1 hr + 5 min = 9 hr 5 min **Ans**

(e)
$$\begin{array}{r} \text{min} \\ 5\ 5 \\ +\ 5\ 4 \\ \hline 1\ 0\ 9 \\ \hline \end{array}$$

Hence, 55 min +54 min
=109 min =60 min +49 min
=1 hr 49 min **Ans.**

(f)
$$\begin{array}{r} \text{hr}\quad \text{min} \\ 4\ \ 3\ 3 \\ +\ \ 6\ \ 4\ 2 \\ \hline 1\ 0\ \ 7\ 5 \\ \hline \end{array}$$

Hence, 4 hr 33 min +6 hr 42 min =10 hr 75 min =10 hr +60 min +15 min =11 hr 15 min **Ans.**

2. (a)
$$\begin{array}{r} \text{hr}\quad \text{min} \\ 6\ \ 0\ 8 \\ -\ 4\ \ 2\ 7 \\ \hline 1\ \ 4\ 1 \\ \hline \end{array}$$

Hence, the required difference =1 hr 41 min

(b)
$$\begin{array}{r} \text{hr}\quad \text{min} \\ 7\ \ 3\ 4 \\ -\ 6\ \ 1\ 2 \\ \hline 1\ \ 2\ 2 \\ \hline \end{array}$$

Hence, required difference =1 hr 22 min **Ans.**

(c)
$$\begin{array}{r} \text{min} \\ 3\ 3\ 9 \\ -2\ 2\ 7 \\ \hline 1\ 1\ 2 \\ \hline \end{array}$$

Hence, required difference =112 min =60 min +52 min =1 hr 52 min **Ans**

(d)
$$\begin{array}{r} \text{m}\quad \text{sec} \\ 6\ \ 2\ 1 \\ -\ 6\ \ 2\ 0 \\ \hline \qquad 1 \\ \hline \end{array}$$

Hence, required difference =1 sec

(e) 4 hr 34 min =4 × 60 min +34 min =274 min
∴274 min −43 min =231 min =180 min +51 min
Hence, required difference =3 hr 51 min =3 hr 51 min **Ans.**

(f)
$$\begin{array}{r} \text{hr}\quad \text{min} \\ 5\ \ 6\ 0 \\ -\ 2\ \ 3\ 1 \\ \hline 3\ \ 2\ 9 \\ \hline \end{array}$$

Hence, required difference, =3 hr 29 min **Ans.**

3. Total time =
$$\begin{array}{r} \text{hr}\quad \text{min} \\ 3\ \ 4\ 3 \\ +\ 1\ \ 3\ 2 \\ \hline 4\ \ 7\ 5 \\ \hline \end{array}$$

Hence, 4 hr 60 min + 15 min 5 hr 15 min he spent altogether. **Ans.**

4. Total time =

hr	min	sec
3	31	27
+1	42	53
4	73	80

Now, 4 hr + 73 min + 80 sec
= 4 hr + 1 hr + 13 min + 1 min + 20 sec = 5 hr + 14 min + 20 sec
= 5 hr 14 min 20 sec
Hence, 5 hr 14 min 20 sec Kaki took solve both the question papers. **Ans.**

5. Bus takes time from A to B = 2 hr 37 min
But takes time from B to C = 24 hr 22 min
∴Bus takes time from A to C = 2 hr 37 min
+24 hr 22 min = 26 hr 59 min
Hence, required time is 26 hr 59 min.

hr	min
2	37
+24	22
26	59

Skill Test-3

1. (a) 990 (b) 7700 (c) 6800 (d) 500 (e) 20080 (f) 105200
(g) 80080 (h) 65000 (i) 10010 (j) 5, 208

2. (a)

kg	g	mg
5	625	875
+8	385	545
14	011	420

(b)

m	cm	mm
28	88	7
+54	24	8
83	13	5

(c)

km	m	cm
13	764	36
+29	388	86
43	153	22

(d)

kl	l	ml
9	387	565
+8	696	785
18	084	350

3. trees in 25 rows = 2275
trees in 1 row = 2275 ÷ 25 = 91
∴trees in 72 rows = 91 × 72 = 6552
Hence, 6552 trees are in 72 rows. **Ans.**

4. (a)

hr	min
28	36
+8	48
36	84

(b)

hrs	min	sec
14	18	25
+6	30	48
20	48	73

Now, 20 hr 18 min 73 sec = 20 hr + 18 min + 1 min + 13 sec
= 20 hr 19 min 13 sec **Ans.**

5. (a) 7 hr 50 min (b) 6 hr 35 min (c) 4 hr 45 min

6. Distance between two cities = 402 km = 402000 m
Travelled by bus (256000 + 565) m = 256565 m
∴travelled by car = 402000 m − 256565 m = 145435 m

Hence, 145 km 435 m travelled by car. **Ans.**

7. Kerosene required to filled tin 16 *l* 675 ml − 10 *l* 785 ml
= (16 × 1000 ml + 675 ml) − (10 × 1000 ml) = 16675 ml − 10785 ml
= 5890 ml = 5 l 890 ml
Hence, 5 *l* 890 ml kerosene is required to fill to tin's capacity. **Ans.**

8. trees in 25 rows = 2275
trees in 1 row = 2275 ÷ 25 = 91
∴trees in 72 rows = 91 × 72 = 6552 **Ans.**

9. Cost of 15 watches = ₹ 5250
Cost of 1 watch = ₹ 5250 ÷ 15 = ₹ 350
∴Cost of 38 watches = ₹ 350 × 38 = ₹ 13300
Hence, cost of 38 watches = ₹ 13300 **Ans.**

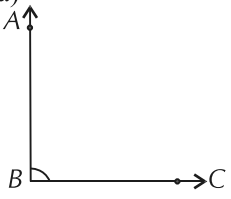
10. (i) (c), (ii) (b), (iii) (b), (iv) (b), (v) (c), (vi) (c), (vii) (d), (viii) (d), (ix) (b), (x) (a)

19. Geometry

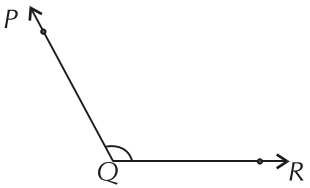
Exercise 19 A

1. (a) $\angle PQR$, (b) $\angle ABC$, (c) $\angle LMN$,
(d) $\angle XYZ$, $\angle XYW$ and $\angle WYZ$

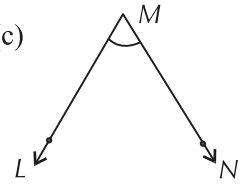
2. (a) (b)



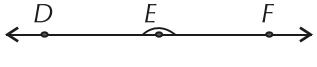
$\angle ABC$



$\angle PQR$

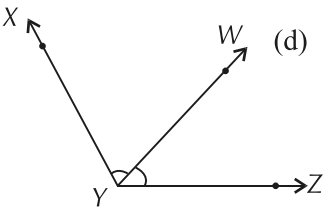
(c) 

$\angle LMN$

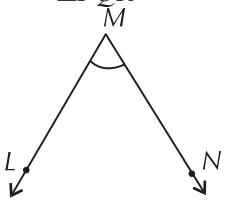
(d) 

$\angle DEF$

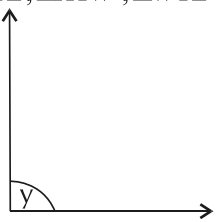
3. $\angle ABC$

(c) 

$\angle PQR$

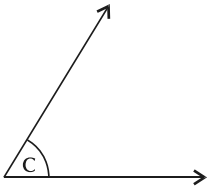
(d) 

$\angle WYZ, \angle XYW, \angle WYZ$

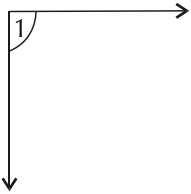
4. (a) 

$\angle y$

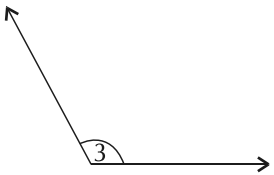
(b) $\angle LMN$



$\angle c$

(c) 

$\angle 1$

(d) 

$\angle 3$

5. $\angle 2 = \angle BOC$, $\angle 3 = \angle COD$, $\angle 4 = \angle DOE$, $\angle 5 = \angle EOF$, $\angle 6 = \angle FOG$, $\angle 7 = \angle GOH$, $\angle 8 = \angle HOI$, $\angle 9 = \angle IOJ$, $\angle 10 = \angle JOA$

6. (a) R (b) $\angle MTN, \angle NTO, \angle MTO$ (c) TN (d) TN, TO

7. (a) M, L, N (b) A, B, C, D (c) P, G, F, Q, E, R

Exercise 19 B

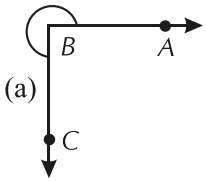
1. (a) $\angle ABC = 60°$ (b) $\angle DEF = 60°$ (c) $\angle LMN = 100°$
(d) $\angle OPQ = 30°$

2. (a) $\angle x = 90°, \angle y = 60°$ $\therefore \angle x > \angle y$
(b) $\angle p = 120°, \angle q = 120°, \angle p = \angle q$
(c) $\angle a = 43°, \angle b = 60°, \angle b > \angle a$ (d) $\angle l > \angle m$

3. (a) acute (b) obtuse (c) obtuse (d) acute (e) acute (f) right
(g) acute (h) acute (i) straight (j) acute (k) complete
(l) straight

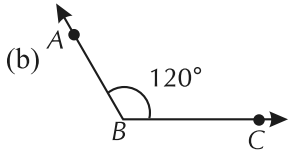
4. 270°

(a)



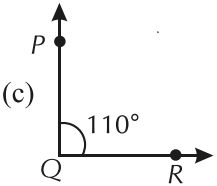
$\therefore \angle ABC = 270°$

(b)



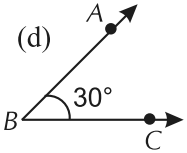
$\therefore \angle ABC = 120°$

(c)



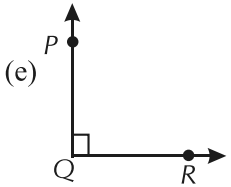
$\therefore \angle PQR = 110°$

(d)



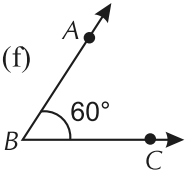
$\therefore \angle ABC = 30°$

(e)



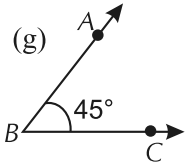
$\therefore \angle PQR = 90°$

(f)



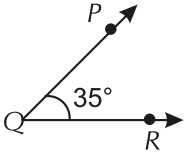
$\therefore \angle ABC = 60°$

(g)



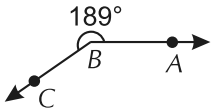
$\therefore \angle ABC = 45°$

(h)



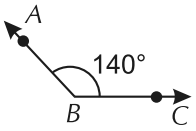
$\therefore \angle PQR = 35°$

(i)



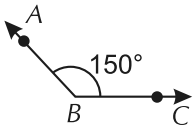
$\therefore \angle ABC = 189°$

(j)



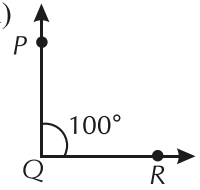
$\therefore \angle ABC = 140°$

(k)



$\therefore \angle ABC = 150°$

(l)

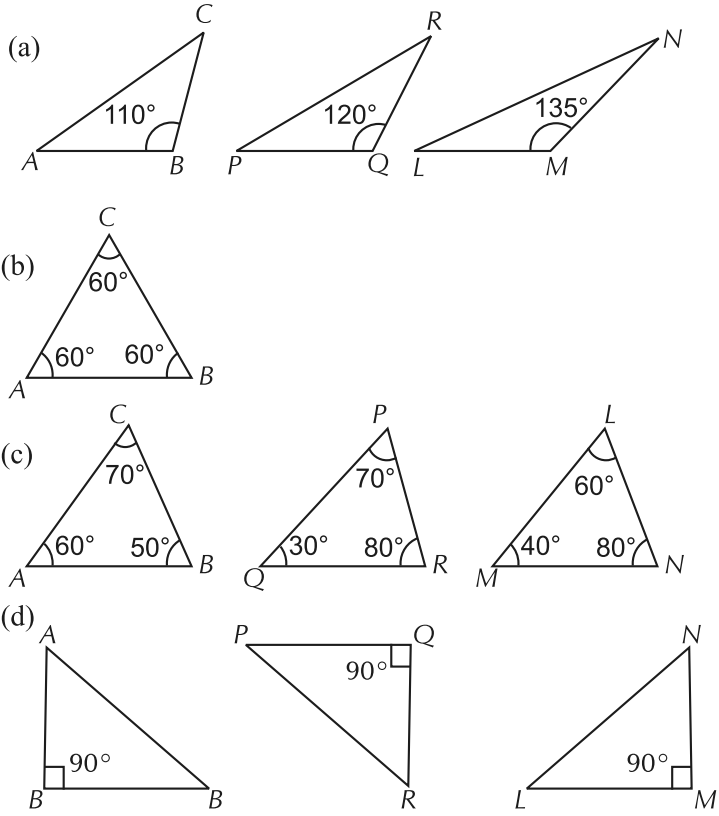


$\therefore \angle PQR = 100°$

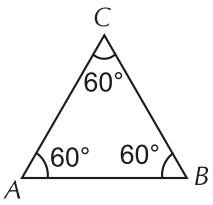
5. Each angle of the square is 90°.
6. Each angle of the rectangle is 90°.
7. (a) Congruent angles (b) No (c) Congruent angles (d) Congruent angles.

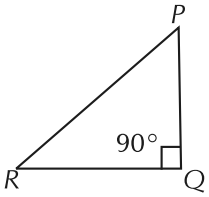
Exercise 19 C

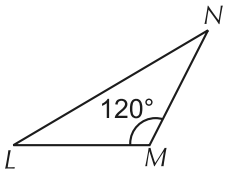
1. **Polygon—** The closed figures having more than two line segments are called ‘‘Polygon’’.
2. (b), (c) and (d) are Polygon.
3. (a) obtuse (b) right (c) acute (d) acute (e) obtuse (f) right (g) obtuse
4.



5.







equiangular triangle right triangle obtuse triangle

6. (a) ΔABC (b) ΔAMD, ΔAME (c) ΔADB, ΔAEC

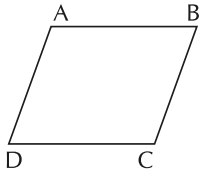
7. 3 **8.** 1 **9.** 1 **10.** 3

Exercise 19 D

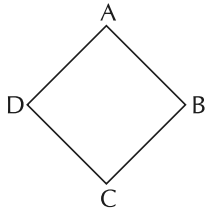
1. (b), (c), (e) and (g) are quadrilaterals.

2. (a) $AB = DC = 4$ cm and $BC = AD = 2$ cm
(b) $PQ = SR = 4$ cm and $PS = QR = 2$ cm
(c) $EF = FG = GH = HE = 2$ cm

3. (a) A quadrilateral whose opposite sides are parallel and equal is called a parallelogram.

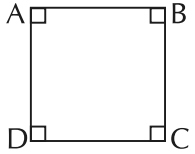


(b) A quadrilateral having all its sides equal and opposite sides parallel is called a rhombus.



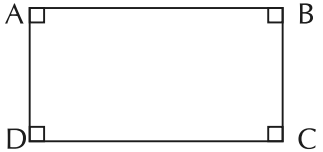
(c) A quadrilateral whose all sides are equal and opposite sides are parallel is called a square.

Square has all sides equal and rectangle have opposite sides equal.



Ans.

(d) A quadrilateral whose opposite sides are equal and paralled is called a rectangle in. Rectangle has each angle 90° and in parallelogram no angle is 90°



(e) Yes.

4. Do Your Self.

5. (a) three (b) square (c) square (d) rectangle.

20. Perimeter

Exercise 20

1. (a) Perimeter = sum of all sides = 6 cm + 7 cm + 8 cm = 21 cm **Ans.**

(b) Perimeter = 2 cm + 7 cm + 2 cm + 7 cm = 18 cm **Ans.**

(c) Perimeter = 4×4 cm = 16 cm **Ans.**

(d) Perimeter = 5 cm × 5 = 25 cm **Ans.**

(e) Perimeter = 5 cm × 4 = 20 cm **Ans.**

(f) Perimeter = 5 cm × 5 = 25 cm **Ans.**

2. (a) Perimeter = $AB + BC + CA$ = 4 cm + 3 cm + 6 m = 13 cm **Ans.**

(b) Perimeter = $AB + BC + CA$ = 12 cm + 5 cm + 13 cm = 30 cm **Ans.**

(c) Perimeter = $AB + BC + CA$ = 7 cm + 8 cm + 9 cm = 24 cm **Ans.**

(d) Perimeter = $AB + BC + CA$ = 1 m 75 cm + 2 m 50 cm + 3 m
= 1×100 cm + 75 cm + 2×100 cm + 50 cm + 3 × 100 cm
= 175 cm + 250 cm + 300 cm = 725 cm = 7 m 25 cm **Ans.**

3. (a) Perimeter = $2(l + b) = 2(13 + 5) = 2 \times 18 = 36$ m **Ans.**

(b) Perimeter = $2(l + b) = 2(7 + 8) = 2 \times 15 = 30$ m **Ans.**

(c) Perimeter = $2(17 + 15) = 2 \times 32 = 64$ cm **Ans.**

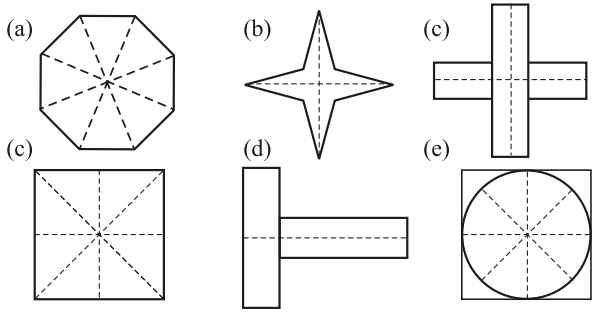
(d) Perimeter = $2(22 + 25) = 2 \times 47 = 94$ cm **Ans.**

4. Length of the boundary = $2(l + b) = 2(132 + 80) = 2 \times 212 = 424$ m **Ans.**

21. Symmetry

1. (a), (b), (c), (d), (f), (g) and (h) are symmetrical.

2.



22. Pictorial Representation of Data

Exercise 22

1. Block A = 50 + 50 + 50 + 50 + 50 = 250 people
Block B = 50 + 50 + 50 + 50 + 25 = 225 people
Block C = 50 + 50 + 50 + 50 + 50 + 25 = 275 people **Ans.**

2. Mohan spent on rent = ₹ 1000 + ₹ 1000 + ₹ 500 = ₹ 2500
Mohan spent on food = ₹ 1000 + ₹ 1000 = ₹ 2000
Mohan spent on medicines = ₹ 500 + ₹ 1000 + ₹ 1000 = ₹ 2500
Mohan spent on other = ₹ 1000 + ₹ 1000 + ₹ 650 = ₹ 2650
Total salary = ₹ 2500 + ₹ 2000 + ₹ 2500 + ₹ 2650 = ₹ 9650 **Ans.**

3.

Colour	Shirts	
Yellow		 10 shirts
Blue		
White		

4.

Cartoon	Children	
Popeye		 = 2 children
Spiderman		
Superman		

5. Both are same.

6. (a) Number of rose in one bunch = 8
Number of rose in 24 bunches = 8 × 24 = 192
Number of sunflower in one bunch = 6
Number of sunflower in 30 bunches = 6 × 30 = 180
Number of magigold in one bunch = 20

Number of marigold in 5 bunches $= 20 \times 5 = 100$

Types of Flowers	Number of flowers sold	
Rose		
Sunflower		$=12$
Marigold		

7.

Colour	Skirts	
Yellow		
Red		$= 10$ Skirts
White		

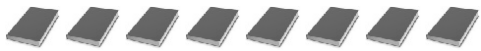
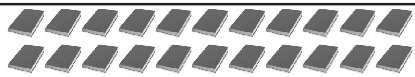
8.

Colours		
Blue		
Orange		2 colours
Vanila		

9. Apple in a bunch $= 10$
Apple in a 5 bunches $= 5 \times 10 = 50$
Mango in a bunch $= 14$
Mango in 4 bunches $= 4 \times 14 = 56$
Banana in a bunch $= 18$
Banana in 3 bunches $= 3 \times 18 = 54$

Types of Fruits	Number of fruits sold	
Apple		
Mango		= 8
Banana		

10. Number of Maths books in a bundle = 20
Number of Maths book in 4 bundles = $20 \times 4 = 80$
Number of Science books in a bundle = 44
Number of Science books in 5 bundles = $44 \times 5 = 220$
Number of Hindi books in a bundle = 17
Number of Hindi books in 6 bundles = $17 \times 6 = 102$

Types of Books	Number of Books Sold	
Maths		
Science		= 10
Hindi