PROGRESS WITH MATHS

Teachers Manual

5

BLUE SKY
BOOKS INTERNATIONAL
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1. Revision

1. (a) 64,08,008
(b) 87,78,238
(c) 92,05,046
(d) 5,28,652
(e) 6,06,281
(f) 10,36,024

2. (a) Eight lakh thirty-five thousand four hundred forty-nine.
(b) Two lakh forty six thousand thirty-nine.
(c) Thirty-three lakh nine thousand two hundred fifty-six.
(d) Seventy-seven lakh five hundred sixty-four.
(e) Thirty-four lakh eighty six thousand four hundred five.
(f) Four lakh sixty-nine thousand two hundred seven.
(g) Thirty three lakh six thousand nine hundred forty-eight.
(h) Forty-five lakh thirty-six thousand seven hundred eighty-one.
(i) Forty-four lakh forty-five thousand eight hundred ninety-three.

3. (a) $45803 + 23089 =$

$$\begin{array}{r} 45803 \\ +\,23089 \\ \hline 68892 \end{array}$$

(b)
$$\begin{array}{r} 10833 \\ +\ 8565 \\ \hline 19398 \end{array}$$

(c)
$$\begin{array}{r} 3656 \\ +60197 \\ \hline 63853 \end{array}$$

(d)
$$\begin{array}{r} 20168 \\ +45764 \\ \hline 65932 \end{array}$$

4. (a)
$$\begin{array}{r} 30265 \\ -14848 \\ \hline 15417 \end{array}$$

(b)
$$\begin{array}{r} 80000 \\ -\ 1866 \\ \hline 78134 \end{array}$$

(c)
$$\begin{array}{r} 66407 \\ -49839 \\ \hline 16568 \end{array}$$

(d)
$$\begin{array}{r} 90080 \\ -35006 \\ \hline 55074 \end{array}$$

5. (a)
$$\begin{array}{r} 806 \\ \times 29 \\ \hline 7254 \\ 16120 \\ \hline 23374 \end{array}$$

(b)
$$\begin{array}{r} 662 \\ \times 37 \\ \hline 4634 \\ 19860 \\ \hline 24494 \end{array}$$

(c)
$$\begin{array}{r} 447 \\ \times 51 \\ \hline 447 \\ 22350 \\ \hline 22797 \end{array}$$

(d)
$$\begin{array}{r} 470 \\ \times\ 16 \\ \hline 2820 \\ 4700 \\ \hline 7520 \\ \hline \end{array}$$

6. (a)
$$\begin{array}{r} 119 \\ 16\overline{)\ 1905} \\ -16 \\ \hline 30 \\ -16 \\ \hline 145 \\ -144 \\ \hline 1 \\ \hline \end{array}$$

Quotient = 119 and remainder = 1

(b)
$$\begin{array}{r} 81 \\ 13\overline{)\ 1056} \\ -104 \\ \hline 16 \\ -13 \\ \hline 3 \\ \hline \end{array}$$

Quotient = 81 and remainder = 3

(c)
$$\begin{array}{r} 228 \\ 15\overline{)\ 3434} \\ -30 \\ \hline 43 \\ -30 \\ \hline 134 \\ 120 \\ \hline 14 \\ \hline \end{array}$$

Quotient = 228 and remainder = 14

(d)
$$\begin{array}{r} 81 \\ 34\overline{)\ 2776} \\ -272 \\ \hline 56 \\ -34 \\ \hline 22 \\ \hline \end{array}$$

Quotient = 81 and remainder = 22

7. 11, 13, 17, 19, 23, 29

8. (a) $64 = 1 \times 64 = 2 \times 32 = 4 \times 16 = 8 \times 8$
All factors of 64 = 1, 2, 4, 8, 16, 32, 64 **Ans.**

(b) $42 = 1 \times 42 = 2 \times 21 = 3 \times 14 = 6 \times 7$
All factors of 42 = 1, 2, 3, 6, 7, 14, 21, 42 **Ans.**

(c) $135 = 1 \times 135 = 3 \times 45 = 9 \times 15 = 5 \times 27$
All factors of 135 = 1, 3, 5, 9, 15, 27, 45, 135 **Ans.**

(d) $63 = 1 \times 63 = 3 \times 1 = 7 \times 9$
All factors of 63 = 1, 3, 7, 9, 21, 63 **Ans.**

9. (a) 5, 10, 15, 20, 25 (b) 6, 12, 18, 24, 30 (c) 7, 14, 21, 28, 35
(d) 9, 18, 27, 36, 45

10. (a) $372 \div 6 = 62$
Yes, 372 is the multiple of 6. **Ans.**

(b) $310 \div 5 = 62$
Yes, 310 is the multiple of 5. **Ans.**

(c) $423 \div 6 = 7.5$
No, 423 is not the multiple of 6. **Ans.**

(d) $240 \div 24 = 10$
Yes, 240 is the multiple of 24. **Ans.**

11. (a) $63 \div 7 = 9$
Yes, 7 is a factor of 63. **Ans.**

(b) $156 \div 12 = 13$
Yes, 12 is a factor of 156. **Ans.**

(c) $124 \div 11 = 11.3$
No, 11 is not a factor of 124. **Ans.**

(d) $90 \div 15 = 6$
Yes, 15 is a factor of 90. **Ans.**

12. (a)

3	12, 15, 18
2	4, 5, 6
2	2, 5, 3
3	1, 5, 3
5	1, 5, 1
	1, 1, 1

$\therefore$ L.C.M. $= 3 \times 2 \times 2 \times 3 \times 5 = 180$ **Ans.**

(b)

2	16, 20, 24
2	8, 10, 12
2	4, 5, 6
2	2, 5, 3
3	1, 5, 3
5	1, 5, 1
	1, 1, 1

$\therefore$ L.C.M. $= 2 \times 2 \times 2 \times 2 \times 3 \times 5$
$= 240$ **Ans.**

(c)

2	48, 64, 96
2	24, 32, 48
2	12, 16, 24
2	6, 8, 12
2	3, 4, 6
2	3, 2, 3
3	3, 1, 3
	1, 1, 1

$\therefore$ L.C.M.
$= 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3$
$= 192$ **Ans.**

(d)

5	45, 60, 90
3	9, 12, 18
3	3, 4, 6
2	1, 4, 2
2	1, 2, 1
	1, 1, 1

$\therefore$ L.C.M.
$= 5 \times 3 \times 3 \times 2 \times 2 = 180$ **Ans.**

13. (a) $27 = 3 \times 3 \times 3$
and $81 = 3 \times 3 \times 3 \times 3$
$\therefore$ H.C.F. $= 3 \times 3 \times 3 = 27$ **Ans.**

(b) $42 = 2 \times 3 \times 7$
$60 = 2 \times 2 \times 3 \times 5$
and $45 = 3 \times 3 \times 5$
$\therefore$ H.C.F. $= 3$ **Ans.**

(c) $32 = 2 \times 2 \times 2 \times 2 \times 2$
$48 = 2 \times 2 \times 2 \times 2 \times 3$ and
$64 = 2 \times 2 \times 2 \times 2 \times 2 \times 2$
$\therefore$ H.C.F. $= 2 \times 2 \times 2 \times 2 = 16$ **Ans.**

(d) $108 = 2 \times 2 \times 3 \times 3 \times 3$

$144 = 2\times2\times2\times2\times3\times3$ and $216 = 2\times2\times2\times3\times3\times3$

$\therefore$ H.C.F. $= 2\times2\times3\times3 = 36$ **Ans.**

14. (a) $\frac{44}{88} = \frac{44\div44}{88\div44} = \frac{1}{2}$ **Ans.** (b) $\frac{175}{200} = \frac{175\div25}{200\div25} = \frac{7}{8}$ **Ans.**

(c) $\frac{124}{136} = \frac{124\div4}{136\div4} = \frac{31}{34}$ **Ans.** (d) $\frac{190}{308} = \frac{190\div2}{308\div2} = \frac{95}{154}$ **Ans.**

15. (a) $\frac{36}{39} < \frac{38}{39}$ (b) $\frac{17}{18} > \frac{17}{19}$ (c) $\frac{13}{14} < \frac{15}{16}$

(d) $\frac{28}{31} > \frac{3}{7}$

16. (a) $\frac{2}{5} = \frac{2\times2}{5\times2} = \frac{4}{10}; \frac{2\times3}{5\times3} = \frac{6}{15}; \frac{2\times4}{5\times4} = \frac{8}{20}; \frac{2\times5}{5\times5} = \frac{10}{25}$

Hence, equivalent fractions are $\frac{4}{10}, \frac{6}{15}, \frac{8}{20}, \frac{10}{25}$ **Ans.**

(b) $\frac{2}{3} = \frac{2\times2}{3\times2} = \frac{4}{6}; \frac{2\times3}{3\times3} = \frac{6}{9}; \frac{2\times4}{3\times4} = \frac{8}{12}; \frac{2\times5}{3\times5} = \frac{10}{15}$

Hence, equivalent fractions are $\frac{4}{6}, \frac{6}{9}, \frac{8}{12}, \frac{10}{15}$ **Ans.**

(c) $\frac{3}{7} = \frac{3\times2}{7\times2} = \frac{6}{14}; \frac{3\times3}{7\times3} = \frac{9}{21}; \frac{3\times4}{7\times4} = \frac{12}{28}; \frac{3\times5}{7\times5} = \frac{15}{35}$

Hence, equivalent fractions are $\frac{6}{14}, \frac{9}{21}, \frac{12}{28}, \frac{15}{35}$ **Ans.**

(d) $\frac{5}{7} = \frac{5\times2}{7\times2} = \frac{10}{14}; \frac{5\times3}{7\times3} = \frac{15}{21}; \frac{5\times4}{7\times4} = \frac{20}{28}; \frac{5\times5}{7\times5} = \frac{25}{35}$

Hence, equivalent fractions are $\frac{10}{14}, \frac{15}{21}, \frac{20}{28}, \frac{25}{35}$ **Ans.**

17. (a) $\frac{2}{17} + \frac{2}{17} - \frac{1}{17} = \frac{2+2-1}{17} = \frac{4-1}{17} = \frac{3}{17}$ **Ans.**

(b) $\frac{1}{5} + \frac{2}{3} = \frac{3+10}{15} = \frac{13}{15}$ **Ans.**

(c) $\frac{5}{2} + \frac{17}{4} = \frac{10+17}{4} = \frac{27}{4} = 6\frac{3}{4}$ **Ans.**

(d) $\frac{19}{5} + \frac{4}{3} = \frac{57+20}{15} = \frac{77}{15} = 5\frac{2}{15}$ **Ans.**

18. (a) $68.92 > 68.29$ (b) $35.06 > 35.006$ (c) $6.8 > 5.99$
(d) $1.34 < 3.0$

19. (a) $1.9 = \frac{19}{10} = 1\frac{9}{10}$ **Ans.** (b) $3.25 = \frac{325}{100} = \frac{65}{20} = \frac{13}{4} = 3\frac{1}{4}$ **Ans.**
(c) $2.5 = \frac{25}{10} = \frac{5}{2} = 2\frac{1}{2}$ **Ans.** (d) $1.2 = \frac{12}{10} = \frac{6}{5} = 1\frac{1}{5}$ **Ans.**

20. (a)
$$\begin{array}{r} 68.00 \\ 8.25 \\ +\ 9.60 \\ \hline 85.85 \end{array}$$
(b)
$$\begin{array}{r} 25.050 \\ 18.961 \\ +17.200 \\ \hline 61.211 \end{array}$$

21. (a)
$$\begin{array}{r} 38.23 \\ -36.56 \\ \hline 1.67 \end{array}$$
(b)
$$\begin{array}{r} 30.00 \\ -15.97 \\ \hline 14.03 \end{array}$$

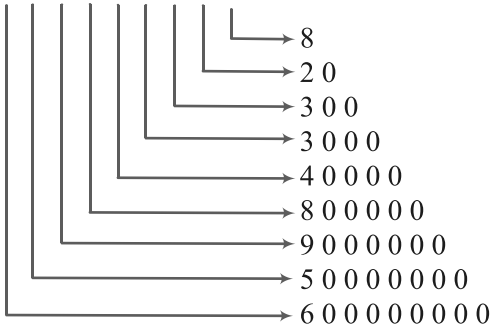
22. (a) Perimeter of square $= 4 \times$ side $= 4 \times 8$ cm $= 32$ cm **Ans.**
(b) Perimeter of $\Delta = 3.5$ cm $+ 2.4$ cm $+ 4.8$ cm $= 10.7$ cm **Ans.**
(c) Perimeter of rectangle $= 2(l + b) = 2(6 + 4)$ cm
$= 2 \times 10$ cm $= 20$ cm **Ans.**
(d) Perimeter of rectangle $= 2(l + b) = 2(3.5 + 1.2)$ cm
$= 2 \times 4.7$ cm $= 9.4$ cm **Ans.**

2. Large Numbers

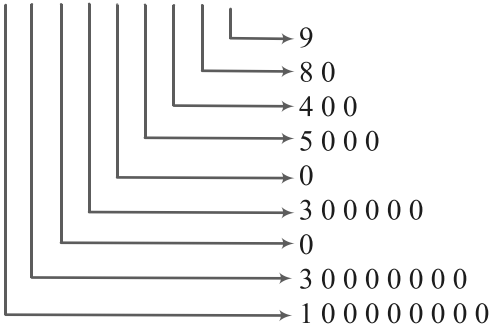
Exercise 2 A

1. (a) 3, 82, 69, 892 (b) 31, 15, 16, 114 (c) 70, 10, 204
(d) 16, 13, 06, 356 (e) 6, 23, 46, 879 (f) 8, 15, 01, 048
(g) 3, 98, 491 (h) 30, 24, 31, 246 (i) 2, 45, 85, 341

2. (a) 6 5 9 8 4 3 3 2 8



(b) 1 3 0 3 0 5 4 8 9



3. (a) 20,06,00,245 (b) 5,87,53,009 (c) 78,00,792
(d) 99,92,99,998 (e) 6,52,40,417 (f) 4,67,213
(g) 75,09,00,031 (h) 3,01,02,001

4. (a) $300000000+50000000+6000000+300000+60000+9000+300+40+5$
(b) $1000000+500000+30000+7000+400+10+2$
(c) $600000000+50000000+4000000+0+40000+7000+300+60+9$
(d) $300000000+30000000++6000000+100000+30000+6000+300+60+0$
(e) $3000000+300000+40000+8000+100+50+3$
(f) $800000000+0+0+800000+40000+5000+900+10+9$

5. (a) 800000 (b) 5000000 (c) 30000000
(d) 500000000

6. (a) 63,04,508 (b) 84,93,35,614 (c) 1,00,00,063
(d) 73,00,44,467 (e) 80,00,08,096

7. (a) 93,43,466; 103,43,466; 113,43,466
(b) 81,68,234; 81,67,234; 81,66,234
(c) 38,33,44,555; 40,33,44,555; 42,33,44,555

8. (a) 999999999 (b) 100000000 (c) 10000000
(d) 1000000 (e) 99999999

9. 10,00,00,000 **10.** 100 **11.** 100 **12.** 99,99,999

13. Place value of 4 = 40000

Exercise 2 B

1. (a) Two hundred ninety million one hundred thousand sixteen – 290, 100, 016
(b) Thirty-seven million six hundred thirty-five thousand four hundred thirty-four – 37, 635, 434
(c) One hundred sixty-four million seven hundred forty-two thousand seven hundred eighty-three – 164, 742, 783
(d) Nine hundred forty million five hundred ten thousand five hundred forty-six – 940, 510, 546
(e) Eight-two million eight hundred fifty-nine thousand sixty-four – 82, 859, 064
(f) six hundred million three hundred twenty-eight thousand four hundred fifteen – 600, 328, 415

2. (a) 9 (b) 2 (c) 39 (d) 1 (e) 8 (f) 5

3. (a) 700,000,000 (b) 80,000,000 (c) 9,000,000
(d) 600,000,000 (e) 500,000,000

4. (a) $3,75,76,758 + 1 = 3,75,76,759$ and $3,75,76,758 - 1 = 3,75,76,757$
(b) $39,999 + 1 = 40,000$ and $39,999 - 1 = 39,998$
(c) $1,55,25,655 + 1 = 1,55,25,656$ and $1,55,25,655 - 1 = 1,55,25,654$
(d) $20,96,390 + 1 = 20,96,391$ and $20,96,390 - 1 = 20,96,389$
(e) $1,99,39,995 + 1 = 1,99,39,996$ and $1,99,39,995 - 1 = 1,99,39,994$

5. (a) 38,560,730 (b) 15,000,055 (c) 40,080,080
(d) 824,925,446 (e) 53,093,642 (f) 2,000,900
(g) 5,235,475 (h) 76,000,450

Exercise 2 C

1. (a) 440 (b) 290 (c) 10 (d) 80 (e) 3390 (f) 130
(g) 2200 (h) 5400 (i) 380

2. (a) 6300 (b) 300 (c) 100 (d) 39400 (e) 3600 (f) 900
(g) 100 (h) 92300 (i) 35400

3. (a) 5000 (b) 1000 (c) 35000 (d) 6000 (e) 4000 (f) 50000
(g) 8000 (h) 3000 (i) 36000

3. Addition and Subtraction of Large Numbers

Exercise 3 A

1. (a)
$$\begin{array}{r} 356483 \\ 2733845 \\ +\,47466421 \\ \hline 50556749 \end{array}$$

(b)
$$\begin{array}{r} 477342431 \\ +\,33541676 \\ \hline 510884107 \end{array}$$

(c)
$$\begin{array}{r} 207814688 \\ 92715841 \\ +\,37640502 \\ \hline 338171031 \end{array}$$

2. (a)
$$\begin{array}{r} 4864875 \\ +\,3879961 \\ \hline 8744836 \end{array}$$

(b)
$$\begin{array}{r} 3785816 \\ +\,4567358 \\ \hline 8353174 \end{array}$$

(c)
$$\begin{array}{r} 4383655 \\ +\,6954364 \\ \hline 11338019 \end{array}$$

(d)
$$\begin{array}{r} 74863945 \\ +\,4914090 \\ \hline 79778035 \end{array}$$

(e)
$$\begin{array}{r} 62482566 \\ +\,2986302 \\ \hline 65468868 \end{array}$$

(f)
$$\begin{array}{r} 2785382 \\ +\,6133416 \\ \hline 8918798 \end{array}$$

(g)
$$\begin{array}{r} 63985920 \\ 4359881 \\ +\,13658720 \\ \hline 82004521 \end{array}$$

(h)
$$\begin{array}{r} 626257756 \\ 97812424 5 \\ +\,107531421 \\ \hline 171191342 2 \end{array}$$

(i)
$$\begin{array}{r} 39381940 \\ 51395681 \\ +\,63232919 \\ \hline 154010540 \end{array}$$

3. (a)
$$\begin{array}{r} 215331 \\ +\,544654 \\ \hline 759985 \end{array}$$

(b)
$$\begin{array}{r} 1829542 \\ +\,1676473 \\ \hline 3506015 \end{array}$$

(c)
$$\begin{array}{r} 6338455 \\ +\,6254432 \\ \hline 12592887 \end{array}$$

(d)
$$\begin{array}{r} 3618317 \\ 534456 \\ +\,\;36625 \\ \hline 4189398 \end{array}$$

4. Total bags of sugar =
$$\begin{array}{r} 42817362 \\ 36768264 \\ +\,\;1936442 \\ \hline 81522068 \end{array}$$

Hence, 8,15,22,068 bags of sugar produced by all the three factories. **Ans.**

5. Total tubelights =
$$\begin{array}{r} 3463199 \\ 3547640 \\ +\,1023333 \\ \hline 8034172 \end{array}$$

Hence, 80,34,172 tubelights produced by the factory in three years. **Ans.**

6. Total area of four South Indian states =

$$\begin{array}{r} 376916 \\ 291873 \\ 48866 \\ +231169 \\ \hline 948824 \end{array}$$

Hence, 9,48,824 sq km are total area of the four South Indian states. **Ans.**

Exercise 3 B

1. (a) $\begin{array}{r} 46385131 \\ -26607395 \\ \hline 19777736 \end{array}$ (b) $\begin{array}{r} 924563 \\ -604050 \\ \hline 320513 \end{array}$ (c) $\begin{array}{r} 8355623 \\ -874678 \\ \hline 7480945 \end{array}$

(d) $\begin{array}{r} 800343 \\ -725562 \\ \hline 74781 \end{array}$ (e) $\begin{array}{r} 5982680 \\ -2594278 \\ \hline 3388402 \end{array}$ (f) $\begin{array}{r} 16248368 \\ -2841987 \\ \hline 13406381 \end{array}$

2. (a) $\begin{array}{r} 5664826 \\ -3529768 \\ \hline 2135058 \end{array}$ (b) $\begin{array}{r} 8331936 \\ -7156643 \\ \hline 1175293 \end{array}$ (c) $\begin{array}{r} 8956685 \\ -7297233 \\ \hline 1659452 \end{array}$

(d) $\begin{array}{r} 1828195 \\ -\ 824653 \\ \hline 1003542 \end{array}$

3. Total income = ₹ 84,726

Total spent rupees =

$$\begin{array}{r} ₹\ 5785 \\ ₹\ 6570 \\ ₹\ 6690 \\ ₹\ 1840 \\ +₹\ 325 \\ \hline ₹21210 \end{array}$$

Left amount =

$$\begin{array}{r} ₹84726 \\ -₹21210 \\ \hline ₹63516 \end{array}$$

Hence, ₹ 63,516 is left. **Ans.**

4. Number of books published by other publisher =

$$\begin{array}{r} 67947873 \\ -49387875 \\ \hline 18559998 \end{array}$$

Hence, 1,85,59,998 Books published by other publisher. **Ans.**

4. Multiplication and division of large numbers

Exercise 4 A

1. (a) $6465 \times 2009 = 2009 \times 6465$ (b) $3476 \times 7563 = 7563 \times 3476$
(c) $1278 \times (684 \times 840) = (1278 \times 684) \times 840$
(d) $88 \times (100 + 36) = (88 \times 100) + (88 \times 36)$
(e) $5893 \times 1 = 5893$ (f) $963 \times (52 \times 118) = 963 \times 52 \times 118$
(g) $8245 \times 0 = 0$
(h) $857 \times (1000 + 57) = (857 \times 1000) + (857 \times 57)$

2. (a) 319120 (b) 66150 (c) 4634100
(d) 361200 (e) 21342000 (f) 2017000

3. (a) 151560 (b) 2874300 (c) 2648100
(d) 44492000 (e) 736800 (f) 104178000

4. (a) $2 \times 643 \times 5 = 643 \times (2 \times 5) = 643 \times 10 = 6430$
(b) $6 \times 3872 \times 20 = 3872 \times (6 \times 20) = 3872 \times 120 = 464640$
(c) $4 \times 928 \times 25 = 928 \times (4 \times 25) = 928 \times 100 = 92800$
(d) $2 \times 2128 \times 500 = 2128 \times (2 \times 500) = 2128 \times 1000 = 2128000$

5. (a) 23653 (b) 14076 (c) 4956 (d) 35646 (e) 11725
(f) 28206 (g) 4125 (h) 420485 (i) 1475243
(j) 5984

Exercise 4 B

1. (a)

	6	5	8	6	
×	3	0	3		
1	9	7	5	8	
0	0	0	0	0	
1	9	7	5	8	0	0
1	9	9	5	5	5	8

(b)

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

(c)

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

(d)

	3	4	0	8
×	3	4	0	
0	0	0	0	
1	3	6	3	2	0
1	0	2	2	4	0	0
1	1	5	8	7	2	0

(e)

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

(f)

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

2. Total number of bricks =

$$\begin{array}{r} 3859 \\ \times 300 \\ \hline 0000 \\ 00000 \\ 1157700 \\ \hline 1157700 \end{array}$$

Hence, total number of bricks = 1157700 **Ans.**

3. Total weights of bales =

$$\begin{array}{r} 89668 \\ \times 323 \\ \hline 269004 \\ 1793360 \\ 26900400 \\ \hline 28962764 \end{array}$$

Hence, the total weight of bales = 2,89,62,764

4. Total number of apples =

$$\begin{array}{r} 4115 \\ \times 318 \\ \hline 32920 \\ 41150 \\ 1234500 \\ \hline 1308570 \end{array}$$

Hence, the total number of apples = 13,08,570 **Ans.**

5. The total length of cable =

$$\begin{array}{r} 3540 \\ \times 815 \\ \hline 17700 \\ 35400 \\ 2832000 \\ \hline 2885100 \end{array}$$

Hence, length of cable = 28,85,100 m **Ans.**

6. Cost of 8857 m cloth =

$$\begin{array}{r} 8857 \\ \times 307 \\ \hline 61999 \\ 00000 \\ 2657100 \\ \hline 2719099 \end{array}$$

Hence, cost of 8857 m cloth is ₹ 27,19,099. **Ans.**

7. Total amount =

$$\begin{array}{r} 48465 \\ \times\ 450 \\ \hline 00000 \\ 2423250 \\ 19386000 \\ \hline 21809250 \end{array}$$

Hence, total amount = ₹ 2,18,09,250 **Ans.**

8. Total collected amount =

$$\begin{array}{r} 88939 \\ \times\ 487 \\ \hline 622573 \\ 7115120 \\ 35575600 \\ \hline 43313293 \end{array}$$

Hence, total collected amount = ₹ 4,33,13,293 **Ans.**

Exercise 4 C

1. (a) $528 \times 5 = (528 \times 10) \div 2 = 5280 \div 2 = 2640$
Hence, $528 \times 5 = 2640$

(b) $84 \times 5 = (84 \times 10) \div 2 = 840 \div 2 = 420$
Hence, $84 \times 5 = 420$

(c) $81 \times 125 = (81 \times 1000) \div 8 = 81000 \div 8 = 10125$
Hence, $81 \times 125 = 10125$

(d) $3316 \times 125 = (3316 \times 1000) \div 8 = 3316000 \div 8 = 414500$
Hence, $3316 \times 125 = 414500$

(e) $342 \times 25 = (342 \times 100) \div 4 = 34200 \div 4 = 8550$
Hence, $342 \times 25 = 8550$

(f) $2363 \times 5 = (2363 \times 10) \div 2 = 23630 \div 2 = 11815$
Hence, $2363 \times 5 = 11815$

(g) $350 \times 25 = (350 \times 100) \div 4 = 35000 \div 4 = 8750$
Hence, $350 \times 25 = 8750$

(h) $3670 \times 125 = (3670 \times 1000) \div 8 = 3670000 \div 8 = 458750$
Hence, $3670 \times 125 = 458750$

(i) $364 \times 25 = (364 \times 100) \div 4 = 36400 \div 4 = 9100$
Hence, $364 \times 25 = 9100$

(j) $3281 \times 125 = (3281 \times 1000) \div 8 = 3281000 \div 8 = 410125$
Hence, $3281 \times 125 = 410125$

Exercise 4 D

1. (a)
$$\begin{array}{r} 126263 \\ 67\overline{)\,8459656} \\ -67 \\ \hline 175 \\ -134 \\ \hline 419 \\ -402 \\ \hline 176 \\ -134 \\ \hline 425 \\ -402 \\ \hline 236 \\ -201 \\ \hline 35 \end{array}$$

Hence, quotient = 126263 and remainder = 35

Verification

Dividend = Quotient × Divisor + Remainder

$8459656 = 126263 \times 67 + 35$

$5456656 = 8459656$ **Proved.**

(b)
$$\begin{array}{r} 28297 \\ 19\overline{)\,537659} \\ -38 \\ \hline 157 \\ -152 \\ \hline 56 \\ -38 \\ \hline 185 \\ -171 \\ \hline 149 \\ -133 \\ \hline 16 \end{array}$$

Hence, quotient = 28297 and remainder = 16

Verification

Dividend = Quotient × Divisor + Remainder

$537659 = 28297 \times 19 + 16$

$537659 = 537659$ **Proved.**

(c)
$$\begin{array}{r} 48 \\ 14\overline{)\,683} \\ -56 \\ \hline 123 \\ -112 \\ \hline 11 \end{array}$$

Hence, quotient = 48 and Remainder = 11

Verification

Dividend = Quotient × Divisor + Remainder

$683 = 48 \times 14 + 11$

$683 = 683$ **Proved.**

(d)
$$\begin{array}{r} 1004 \\ 325\overline{)\,326387} \\ -325 \\ \hline 1387 \\ -1300 \\ \hline 87 \end{array}$$

Hence, quotient = 1004 and remainder = 87

Verification

Dividend = Quotient × Divisor + Remainder

$326387 = 1004 \times 325 + 87$

$326387 = 326387$ **Proved.**

(e)
$$\begin{array}{r} 2870 \\ 312\overline{)\ 8\,9\,5\,6\,6\,4} \\ -\,6\,2\,4 \\ \hline 2\,7\,1\,6 \\ -\,2\,4\,9\,6 \\ \hline 2\,2\,0\,6 \\ -\,2\,1\,8\,4 \\ \hline 2\,2\,4 \end{array}$$

Hence, quotient = 2870 and Remainder = 224

Verification

Dividend = Quotient × Divisor + Remainder

$895664 = 2870 \times 312 + 224$

$895664 = 895664$ **Proved.**

(f)
$$\begin{array}{r} 1398 \\ 350\overline{)\ 4\,8\,9\,5\,6\,6} \\ -\,3\,5\,0 \\ \hline 1\,3\,9\,5 \\ -\,1\,0\,5\,0 \\ \hline 3\,4\,5\,6 \\ -\,3\,1\,5\,0 \\ \hline 3\,0\,6\,6 \\ -\,2\,8\,0\,0 \\ \hline 2\,6\,6 \end{array}$$

Hence, quotient = 1398 and Remainder = 266

Verificatioin

Dividend = Quotient × Divisor + Remainder

$489566 = 1398 \times 350 + 266$

$489566 = 489566$ **Proved.**

2. Dividend = Quotient × Divisor + Remainder

(a) Dividend

$= 440 \times 265 + 104 = 116704$

Ans.

(b) Dividend

$= 6216 \times 314 + 159 = 1951983$

Ans.

(c) Dividend

$= 321 \times 679 + 376 = 218335$

Ans.

3. Number of fans =
$$\begin{array}{r} 10235 \\ 325\overline{)\ 3\,3\,2\,6\,3\,7\,5} \\ -\,3\,2\,5 \\ \hline 7\,6\,3 \\ -\,6\,5\,0 \\ \hline 1\,1\,3\,7 \\ -\,9\,7\,5 \\ \hline 1\,6\,2\,5 \\ -\,1\,6\,2\,5 \\ \hline 0 \end{array}$$

Hence, the number of fans = 10235. **Ans.**

4. Average Distance in per day =
$$\begin{array}{r} 1199 \\ 375\overline{)\ 4\,4\,9\,6\,2\,5} \\ -\,3\,7\,5 \\ \hline 7\,4\,6 \\ -\,3\,7\,5 \\ \hline 3\,7\,1\,2 \\ -\,3\,3\,7\,5 \\ \hline 3\,3\,7\,5 \\ -\,3\,3\,7\,5 \\ \hline 0 \end{array}$$

Hence, 1199 km distance car ran per day. **Ans.**

5. Weight of 210 tons $= 1000 \times 210 = 210000$ kg
Number of bags of rice $= 210000 \div 75 = 2800$
Ans.

$$
\begin{array}{r|l}
75 & 2800 \\
\hline
 & 210000 \\
 & -150 \\
\hline
 & 600 \\
 & -600 \\
\hline
 & 0
\end{array}
$$

Skill Test-1

1.	(c) 8000000	(✓)	**2.**	(a) 1 million	(✓)
3.	(c) 1000000	(✓)	**4.**	(a) 48080518	(✓)
5.	(b) 431077694	(✓)	**6.**	(c) 3893771	(✓)
7.	(b) not defined	(✓)	**8.**	(a) 1	(✓)

5. Order of Operation

Exercise 5

1. (a) $8 \times 3 - 5 = 24 - 5 = 19$ **Ans.**

(b) $36 \times 4 + 18 = 144 + 18 = 162$ **Ans.**

(c) $18 \div 3 + 9 - 6 = 6 + 9 - 6 = 15 - 6 = 9$ **Ans.**

(d) $16 \times 5 - 4 \times 3 + 8 = 80 - 12 + 8 = 88 - 12 = 76$ **Ans.**

(e) $\frac{4}{5} + \frac{3}{5}$ of $\frac{5}{9} \div \frac{1}{6} = \frac{4}{5} + \frac{3}{5} \times \frac{5}{9} \div \frac{1}{6} = \frac{4}{5} + \frac{1}{3} \times \frac{6}{1}$

$= \frac{4}{5} + 2 = \frac{4+10}{5} = \frac{14}{5} = 2\frac{4}{5}$ **Ans.**

(f) $19 - 40 \times \frac{1}{10} + 15 \div 3 = 19 - 40 \times \frac{1}{10} + 5 = 19 - 4 + 5$

$= 24 - 4 = 20$ **Ans.**

(g) $125 + [22 - \{26 + 5 \times 10\}] = 125 + [22 - \{26 + 50\}]$

$= 125 + [22 - 76] = 125 - 54 = 71$ **Ans.**

(h) $(50 - 12) \times [24 \div (4 + 4)] = 38 \times [24 \div 8] = 38 \times 3 = 114$ **Ans.**

2. (a) $25 \div 5 \times 7 + 22 - 3 \times (6 + 4) = 5 \times 7 + 22 - 3 \times 10$

$= 35 + 22 - 30 = 57 - 30 = 27$ **Ans.**

(b) $\frac{7}{8} \times \left[6 + \left\{\frac{3}{4} - \left(\frac{1}{3} - \frac{1}{4}\right)\right\}\right] \div 3\frac{3}{5} = \frac{7}{8} \times \left[6 + \left\{\frac{3}{4} - \left(\frac{4-3}{12}\right)\right\}\right] \div \frac{18}{5}$

$= \frac{7}{8} \times \left[6 + \left\{\frac{3}{4} - \frac{1}{12}\right\}\right] \div \frac{18}{5} = \frac{7}{8} \times \left[6 + \left\{\frac{9-1}{12}\right\}\right] \div \frac{18}{5}$

$$= \frac{7}{8} \times \left[6 + \frac{8}{12}\right] \div \frac{18}{5} = \frac{7}{8} \times \left[6 + \frac{2}{3}\right] \div \frac{18}{5}$$

$$= \frac{7}{8} \times \left[\frac{18+2}{3}\right] \div \frac{18}{5} = \frac{7}{8} \times \frac{20}{3} \times \frac{5}{18} = \frac{175}{108} = 1\frac{67}{108}$$ **Ans.**

(c) $\left(6\frac{3}{5} \div \frac{1}{5}\right) \times \left(\frac{1}{4} \text{ of } 2\frac{3}{5}\right) \div \frac{2}{25} = \left(\frac{33}{5} \div \frac{1}{5}\right) \times \left(\frac{1}{4} \times \frac{13}{5}\right) \div \frac{2}{25}$

$$= \left(\frac{33}{5} \times 5\right) \times \left(\frac{13}{20}\right) \div \frac{2}{25} = 33 \times \frac{13}{20} \times \frac{25}{2} = \frac{33 \times 65}{8}$$

$$= \frac{2145}{8} = 268\frac{1}{8}$$ **Ans.**

(d) $\left(\frac{1}{6} \div 4\frac{1}{4}\right) \text{of} \frac{4}{5} \div 1\frac{2}{3} + \frac{5}{6} = \left(\frac{1}{6} \div \frac{17}{4}\right) \text{of} \frac{4}{5} \div \frac{5}{3} + \frac{5}{6}$

$$= \left(\frac{1}{6} \times \frac{4}{17}\right) \text{of} \frac{4}{5} \div \frac{5}{3} + \frac{5}{6} = \frac{2}{51} \times \frac{4}{5} \div \frac{5}{3} + \frac{5}{6} = \frac{8}{255} \times \frac{3}{5} + \frac{5}{6}$$

$$= \frac{24}{1275} + \frac{5}{6} = \frac{144 + 6375}{7650} = \frac{6519}{7650} = \frac{2173}{2550}$$ **Ans.**

(e) $85 - 28 \div 7 \times 16 - 11 = 85 - 4 \times 16 - 11 = 85 - 64 - 11$

$= 85 - 75 = 10$ **Ans.**

(f) $10 \times 8 - 5 + 20 \times 6 - 15 + 48 \div 3 + 24 = 80 - 5 + 20 \times 6 - 15 + 16 + 24$

$= 80 - 5 + 120 - 15 + 16 + 24 = 240 - 20 = 220$ **Ans.**

6. Factors of Multiples

Exercise 6 A

1. (a) 1, 2, 4, 8 (b) 1,5 (c) 1, 3, 7 (d) 1, 2, 3, 4, 6, 8 (e) 1, 5, 7
(f) 1, 2, 3, 6, 7 (g) 1, 2, 4, 5, 8, 10

2. (a) 1, 5 (b) 1, 2, 3, 4, 6, 12 (c) 1, 2, 4, 5, 10, 20
(d) 1, 2, 11, 22 (e) 1, 2, 4, 8, 16, 32
(f) 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60

3. (a) $3 \times 11 = 33$, so 3 and 11 are factors of 33
(b) $4 \times 6 = 24$, so 4 and 6 are factors of 24.
(c) $6 \times 7 = 42$, so 6 and 7 are factors of 42.

4. (a) $18 \div 3 = 6$
18 is completely divisible by 3.
Hence, 3 is a factor of 18.

(b) Dividing 14 by 4

$$\begin{array}{r} 3 \\ 4\overline{)\,14} \\ -12 \\ \hline 2 \end{array}$$

2 is left as the remainder.
Hence, 4 is not a factor of 14.

(c) Dividing 48 by 5.

$$\begin{array}{r} 9 \\ 5\overline{)\,48} \\ -45 \\ \hline 3 \end{array}$$

9 is left as the remainder.
Hence, 5 is not a factor of 48.

(d) $96 \div 8 = 12$
96 is completely divisible by 8.
Hence, 8 is a factor of 96.

(e) Dividing 70 by 11.

$$\begin{array}{r} 6 \\ 11\overline{)\,70} \\ -66 \\ \hline 4 \end{array}$$

4 is left as the remainder.
Hence, 11 is not a factor of 70.

(f) $112 \div 14 = 8$
112 is completely divisible by 14.
Hence, 14 is a factor of 112.

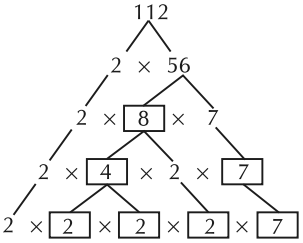
5. (a) 23 (b) 61 (c) 83 (d) 101

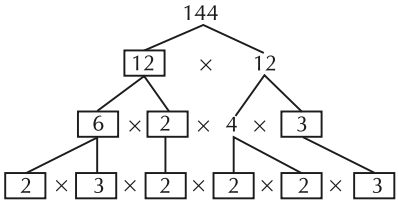
6. (a) 19 (b) 37 (c) 59 (d) 67

7. (a) No (b) 1 (c) 2 (d) 2 (e) 2, 3

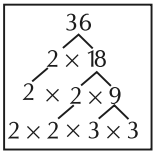
Exercise 6 B

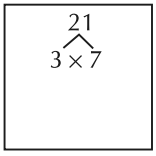
1. (a) 56 (b) 144

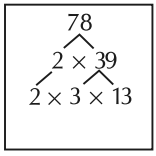


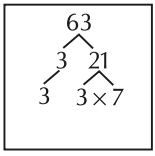


2. (a) 36 (b) 21 (c) 78 (d) 63









3. (a) $112 = 2 \times 2 \times 2 \times 2 \times 7$ (b) $90 = 2 \times 3 \times 3 \times 5$
(c) $72 = 2 \times 2 \times 2 \times 3 \times 3$ (d) $144 = 2 \times 2 \times 2 \times 2 \times 3 \times 3$
(e) $150 = 2 \times 3 \times 5 \times 5$ (f) $165 = 3 \times 5 \times 11$

4. (a) C (b) P (c) C (d) C (e) C (f) P
(g) P (h) P (i) C

Exercise 6 C

1. (a) 4, 8, 12, 16 (b) 10, 20, 30, 40 (c) 15, 30, 45, 60
(d) 20, 40, 60, 80 (e) 16, 32, 48, 64

2. (a) Yes (b) No (c) No (d) No (e) Yes (f) No
(g) Yes (h) No (i) Yes

3. (a) 11, 13, 17, 19 (b) 14, 15, 16, 18, 20, 21, 22
(c) 29, 31

4. (a) 8 (b) 3, 6, 8 (c) 24

5. (a) 1, 2, 3, 4, 6, 9, 12, 18, 36 (b) 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72
(c) 1, 2, 3, 5, 6, 10, 15, 25, 30, 50, 75, 150

6. (a) 28, 35 (b) 4, 8, 12, 16 (c) 83, 89
(d) 26, 27, 28, 30, 32, 33, 34

Exercise 6 D

1. (a) $6 = 2 \times 3$ and $12 = 2 \times 2 \times 3$
Common factors are 2, 3.
$\therefore$ HCF $= 2 \times 3 = 6$

(b)

2	84
2	42
3	21
7	7
	1

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

$84 = 2 \times 2 \times 3 \times 7$
$96 = 2 \times 2 \times 2 \times 2 \times 2 \times 3$
Common factors are $2 \times 2 \times 3$
$\therefore$ HCF $= 2 \times 2 \times 3 = 12$

(c)

3	135
3	45
3	15
5	5
	1

3	225
3	75
5	25
5	5
	1

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

$225 = 3 \times 3 \times 5 \times 5$

Common factors are

$3 \times 3 \times 5$.

$\therefore \text{HCF} = 3 \times 3 \times 5 = 45$

(d)

3	45
3	15
5	5
	1

3	75
5	25
5	5
	1

2	100
2	50
5	25
5	5
	1

$45 = 3 \times 3 \times 5$

$75 = 3 \times 5 \times 5$

$100 = 2 \times 2 \times 5 \times 5$

Common factors is 5.

$\therefore \quad \text{HCF} = 5$

(e)

2	108
2	54
3	27
3	9
3	3
	1

2	144
2	72
2	36
2	18
3	9
3	3
	1

$108 = 2 \times 2 \times 3 \times 3 \times 3$; $144 = 2 \times 2 \times 2 \times 2 \times 3 \times 3$

Common factors are $2 \times 2 \times 3 \times 3$.

$\therefore \text{HCF} = 2 \times 2 \times 3 \times 3 = 36$

(f)

2	48
2	24
2	12
2	6
3	3
	1

2	54
3	27
3	9
3	3
	1

2	60
2	30
3	15
5	5
	1

$48 = 2 \times 2 \times 2 \times 2 \times 3$; $54 = 2 \times 3 \times 3 \times 3$; $60 = 2 \times 2 \times 3 \times 5$

Common factors are 2×3.

$\therefore$ HCF $= 2 \times 3 = 6$.

(g)

5	175
5	35
7	7
	1

3	225
3	75
5	25
	5

5	575
5	115
23	23
	1

$175 = 5 \times 5 \times 7$; $225 = 3 \times 3 \times 5 \times 5$; $575 = 5 \times 5 \times 23$

Common factors are 5×5.

$\therefore$ HCF $= 5 \times 5 = 25$

(h)

5	175
5	35
	7

3	225
3	75
5	25
	5

$175 = 5 \times 5 \times 7$; $225 = 3 \times 3 \times 5 \times 5$

Common factors are 5×5.

$\therefore$ HCF $= 5 \times 5 = 25$

(i)

5	25
5	5
	1

2	30
3	15
5	5
	1

3	75
5	25
	5

$25 = 5 \times 5$; $30 = 2 \times 3 \times 5$; $75 = 3 \times 5 \times 5$

Common factors are 5.

$\therefore$ HCF $= 5$

(j)

2	136
2	68
2	34
17	17
	1

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

2	448
2	224
2	112
2	56
2	28
2	14
7	7
	1

$136 = 2 \times 2 \times 2 \times 17$; $256 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$

$448 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 7$

Common factors are $2 \times 2 \times 2$.

$\therefore HCF = 2 \times 2 \times 2 = 8$

2. (a) Factors of 9 are 1, 3, 9.
Factors of 15 are 1, 3, 5, 15.
Common factors of 9 and 15 are 1, 3.

(b) Factors of 12 : 1, 2, 3, 4, 6, 12
Factors of 48 : 1, 2, 3, 4, 6, 8, 12, 16, 24, 48
Common factors of 12 and 48 are 1, 2, 3, 4, 6, 12.

(c) Factors of 105 : 1, 3, 5, 7, 15, 21, 35, 105
Factors of 120 : 1, 2, 3, 4, 5, 6, 8, 15, 20, 24, 30, 40, 60, 120
Common factors of 105 and 120 are 1, 3, 5, 15.

(d) Factors of 77 : 1, 7, 11, 77
Factors of 88 : 1, 8, 11, 88
Factors of 66 : 1, 6, 11, 66
Common factors of 77, 88 and 66 are 1, 11.

(e) Factors of 42 : 1, 2, 3, 6, 7, 14, 21, 42
Factors of 56 : 1, 2, 4, 7, 8, 14, 28, 56
Common factors of 42 and 56 are 1, 2, 7, 14.

(f) Factors of 30 : 1, 2, 3, 5, 6, 10, 15, 30
Factors of 20 : 1, 2, 4, 5, 10, 20
Factors fo 25 : 1, 5, 25
Common factors of 30, 20 and 25 are 1, 5.

Exercise 6 E

1. (a)

$$
\begin{array}{r}
27\overline{)\,42\,(1} \\
-27 \\
\hline
15\overline{)\,27\,(1} \\
-15 \\
\hline
12\overline{)\,15\,(1} \\
-12 \\
\hline
3\overline{)\,12\,(4} \\
-12 \\
\hline
0
\end{array}
$$

Hence, the H.C.F. of 27 and 42 = 3 **Ans.**

(b)

$$
\begin{array}{r}
45\overline{)\,90\,(2} \\
-90 \\
\hline
0
\end{array}
$$

Hence, the H.C.F. of 45 and 90 = 45 **Ans.**

(c)

$$
\begin{array}{r}
119\overline{)\,187\,(1} \\
-119 \\
\hline
68\overline{)\,119\,(1} \\
-68 \\
\hline
51\overline{)\,68\,(1} \\
-51 \\
\hline
17\overline{)\,51\,(3} \\
-51 \\
\hline
0
\end{array}
$$

Hence, the H.C.F. of 119 and 187 = 17 **Ans.**

(d)

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

Hence, the H.C.F. of 70 and 560 = 70 **Ans.**

(e)

$$
\begin{array}{r}
36\overline{)\ 63\ (1} \\
-36 \\
\hline
27\overline{)\ 36\ (1} \\
-27 \\
\hline
9\overline{)\ 27\ (3} \\
-27 \\
\hline
0
\end{array}
$$

Hence, the H.C.F. of 36 and 63 = 9 **Ans.**

(f)

$$
\begin{array}{r}
63\overline{)\ 96\ (1} \\
-63 \\
\hline
33\overline{)\ 63\ (1} \\
-33 \\
\hline
30\overline{)\ 33\ (1} \\
-30 \\
\hline
3\overline{)\ 30\ (10} \\
-30 \\
\hline
0
\end{array}
$$

Hence, the H.C.F. of 63 and 96 = 3 **Ans.**

(g)

$$
\begin{array}{r}
49\overline{)\ 147\ (3} \\
-147 \\
\hline
0
\end{array}
$$

Hence, the H.C.F. of 49 and 147 = 49 **Ans.**

(h)

$$
\begin{array}{r}
84\overline{)\ 144\ (1} \\
-84 \\
\hline
60\overline{)\ 84\ (1} \\
-60 \\
\hline
24\overline{)\ 60\ (2} \\
-48 \\
\hline
12\overline{)\ 24\ (2} \\
-24 \\
\hline
0
\end{array}
$$

Hence, the H.C.F. of 84 and 144 = 12 **Ans.**

(i)

$$
\begin{array}{r}
1944\overline{)\ 2376}\,(1 \\
-1944 \\
\hline
432\overline{)\ 1944}\,(4 \\
-1728 \\
\hline
216\overline{)\ 432}\,(2 \\
-432 \\
\hline
0
\end{array}
$$

Hence, the H.C.F. of 1944 and 2376 = 216 **Ans.**

(j)

$$
\begin{array}{r}
506\overline{)\ 2541}\,(5 \\
-2530 \\
\hline
11\overline{)\ 506}\,(46 \\
-44 \\
\hline
66 \\
-66 \\
\hline
0
\end{array}
$$

Therefore, the H.C.F of 506 and 2541 is 11.

Now,

$$
\begin{array}{r}
363 \\
11\overline{)\ 3993} \\
-33 \\
\hline
69 \\
-66 \\
\hline
33 \\
-33 \\
\hline
0
\end{array}
$$

Hence, the H.C.F of 506, 2541 and 3993 is 11. **Ans.**

(k)

$$
\begin{array}{r}
450\overline{)\ 675}\,(1 \\
-450 \\
\hline
225\overline{)\ 450}\,(2 \\
-450 \\
\hline
0
\end{array}
$$

Therefore, the H.C.F of 450 and 675 is 225.

$$
\begin{array}{r}
225\overline{)\ 2025}\,(9 \\
-2025 \\
\hline
0
\end{array}
$$

Hence, the H.C.F. of 450, 675 and 2025 is 225. **Ans.**

(l)

$$
\begin{array}{r}
1449\overline{)\ 2346}(1 \\
-1449 \\
\hline
897\overline{)\ 1449}(1 \\
-897 \\
\hline
552\overline{)\ 897}(1 \\
-552 \\
\hline
345\overline{)\ 552}(1 \\
-345 \\
\hline
207\overline{)\ 345}(1 \\
-207 \\
\hline
138\overline{)\ 207}(1 \\
-138 \\
\hline
69\overline{)\ 138}(2 \\
-138 \\
\hline
0
\end{array}
$$

Hence, the H.C.F. of 1449 and 2346 is 69. **Ans.**

$$
\begin{array}{r}
197 \\
69\overline{)\ 13593} \\
-69 \\
\hline
669 \\
-621 \\
\hline
483 \\
-483 \\
\hline
0
\end{array}
$$

Hence, the H.C.F. of 1449, 2346 and 13593 is 69. **Ans.**

Exercise 6 F

1. (a) Multiples of 4 : 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, ...
Multiples of 6 : 6, 12, 18, 24, 30, 36, 42, 48, ...
Common multiples are 12, 24, 36, ...
Hence, least common multiple is 12.

(b) Multiples of 6 : 6, 12, 18, 24, 30, 36, 42, 48, 54, 60, ...
Multiples of 8 : 8, 16, 24, 32, 40, 48, 56, 64, 72, 80, ...
Common multiples are 24, 48 ...
Hence, least common multiple is 24.

(c) Multiples of 3 : 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, ...
Multiples of 9 : 9, 18, 27, 36, 45, 54, ...
Common multiples are 9, 18, 27, ...
Hence, least common multiple is 9.

(d) Multiples of 5 : 5, 10, 15, 20, 25, 30, 35, ...
Multiples of 10 : 10, 20, 30, 40, 50, 60, ...
Common multiples are 10, 20, 30, ...
Hence, least common multiples is 10.

(e) Multiples of 5 : 5, 10, 15, 20, 25, 30, 35, 40, ...
Multiples of 7 : 7, 14, 21, 28, 35, 42, 49, ...
Common multiples are 35, ...
Hence, least common multiple is 35.

2. (a)

2	18
3	9
3	3
	1

2	24
2	12
2	6
	3

$18 = 2 \times 3 \times 3$
$24 = 2 \times 2 \times 2 \times 3$
$LCM = 2 \times 3 \times 3 \times 2 \times 2 = 72$
Hence, LCM of 18 and 24 is 72. **Ans.**

(b)

2	12
2	6
3	3
	1

2	18
3	9
3	3
	1

$12 = 2 \times 2 \times 3$
$18 = 2 \times 3 \times 3$
$LCM = 2 \times 3 \times 2 \times 3 = 36$
Hence, LCM of 12 and $18 = 36$ **Ans.**

(c)

2	60
2	30
3	15
5	5
	1

2	84
2	42
3	21
	7

$60 = 2 \times 2 \times 3 \times 5$
$84 = 2 \times 2 \times 3 \times 7$
$LCM = 2 \times 2 \times 3 \times 5 \times 7 = 420$
Hence, LCM of 60 and $84 = 420$ **Ans.**

(d)

2	24
2	12
2	6
	3

2	36
2	18
3	9
	3

$24 = 2 \times 2 \times 2 \times 3$
$36 = 2 \times 2 \times 3 \times 3$
$LCM = 2 \times 2 \times 2 \times 3 \times 3 = 72$
Hence, LCM of 24 and $36 = 72$ **Ans.**

(e)

2	32
2	16
2	8
2	4
	2

2	48
2	24
2	12
2	6
	3

$32 = 2 \times 2 \times 2 \times 2 \times 2$
$48 = 2 \times 2 \times 2 \times 2 \times 3$
LCM
$= 2 \times 2 \times 2 \times 2 \times 2 \times 3 = 96$
Hence, LCM of 32 and
$48 = 96$ **Ans.**

(f)

2	60
2	30
3	15
5	5
	1

2	72
2	36
2	18
3	9
	3

$60 = 2 \times 2 \times 3 \times 5$
$72 = 2 \times 2 \times 2 \times 3 \times 3$
LCM
$= 2 \times 2 \times 3 \times 3 \times 2 \times 5 = 360$
Hence, LCM of 60 and
$72 = 360$ **Ans.**

(g)

2	30
3	15
5	5
	1

2	40
2	20
2	10
5	5
	1

$30 = 2 \times 3 \times 5$
$40 = 2 \times 2 \times 2 \times 5$
LCM $= 2 \times 2 \times 2 \times 3 \times 5 = 120$
Hence, LCM of 30 and
$40 = 120$ **Ans**

(h)

2	30
3	15
5	5
	1

2	42
3	21
7	7
	1

$30 = 2 \times 3 \times 5$
$42 = 2 \times 3 \times 7$
LCM $= 2 \times 3 \times 5 \times 7 = 210$
Hence, LCM of 30 and
$42 = 210$ **Ans.**

(i)

2	12
2	6
3	3
	1

3	15
5	5
	1

$12 = 2 \times 2 \times 3$
$15 = 3 \times 5$
LCM $= 3 \times 2 \times 2 \times 5 = 60$
Hence, LCM of 12 and
$15 = 60$ **Ans.**

(j)

3	81
3	27
3	9
3	3
	1

2	54
3	27
3	9
3	3
	1

$81 = 3 \times 3 \times 3 \times 3$
$54 = 2 \times 3 \times 3 \times 3$
LCM $= 3 \times 3 \times 3 \times 3 \times 2 = 162$
Hence, LCM of 81 and 54
is 162. **Ans.**

(k)

2	60
2	30
3	15
5	5
	1

2	90
3	45
3	15
5	5
	1

2	120
2	60
2	30
3	15
5	5
	1

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

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

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

Hence, LCM of 60, 90 and

$120 = 2 \times 3 \times 5 \times 2 \times 2 \times 3 = 360$ **Ans.**

(l)

2	16
2	8
2	4
2	2
	1

2	24
2	12
2	6
3	3
	1

2	36
2	18
3	9
3	3
	1

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

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

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

Hence, LCM of 16, 24 and $36 = 2 \times 2 \times 2 \times 2 \times 3 \times 3 = 144$ **Ans.**

(m)

2	12
2	6
3	3
	1

2	18
3	9
3	3
	1

2	24
2	12
2	6
3	3
	1

$12 = 2 \times 2 \times 3$

$18 = 2 \times 3 \times 3$

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

Hence, LCM of 12, 18 and $24 = 2 \times 2 \times 2 \times 3 \times 3 = 72$ **Ans.**

Exercise 6G

1. (a)

5	40, 45, 75
3	8, 9, 15
3	8, 3, 5
5	8, 1, 5
2	8, 1, 1
2	4, 1, 1
2	2, 1, 1
	1, 1, 1

$\therefore$ L.C.M.
$= 5 \times 3 \times 3 \times 5 \times 2 \times 2 \times 2 = 1800$
Ans.

(b)

2	96, 144, 160
2	48, 72, 80
2	24, 36, 40
2	12, 18, 20
2	6, 9, 10
3	3, 9, 5
3	1, 3, 5
5	1, 1, 5
	1, 1, 1

$\therefore$ L.C.M.
$= 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 5$
$= 1440$ **Ans.**

(c)

3	30, 36, 45
2	10, 12, 15
5	5, 6, 15
3	1, 6, 3
2	1, 2, 1
	1, 1, 1

$\therefore$ L.C.M.
$= 3 \times 2 \times 5 \times 3 \times 2 = 180$ **Ans.**

(d)

2	112, 126, 336
2	56, 63, 168
2	28, 63, 84
2	14, 63, 42
7	7, 63, 21
3	1, 9, 3
3	1, 3, 1
	1, 1, 1

$\therefore$ L.C.M.
$= 2 \times 2 \times 2 \times 2 \times 7 \times 3 \times 3 = 1008$
Ans.

(e)

3	72, 126, 135
3	24, 42, 45
2	8, 14, 15
2	4, 7, 15
2	2, 7, 15
7	1, 7, 15
5	1, 1, 15
3	1, 1, 3
	1, 1, 1

$\therefore$ L.C.M.
$= 3 \times 3 \times 2 \times 2 \times 2 \times 7 \times 5 \times 3$
$= 7560$ **Ans.**

(f)

2	108, 144, 164
2	54, 72, 82
3	27, 36, 41
3	9, 12, 41
3	3, 4, 41
2	1, 4, 41
2	1, 2, 41
41	1, 1, 41
	1, 1, 1

$\therefore$L.C.M.
$= 2 \times 2 \times 3 \times 3 \times 3 \times 2 \times 2 \times 41$
$= 17712$ **Ans.**

(g)

2	36, 48, 60, 72, 100
2	18, 24, 30, 36, 50
3	9, 12, 15, 18, 25
3	3, 4, 5, 6, 25
2	1, 4, 5, 2, 25
2	1, 2, 5, 1, 25
5	1, 1, 5, 1, 25
5	1, 1, 1, 1, 5
	1, 1, 1, 1, 1

$\therefore$L.C.M.
$= 2 \times 2 \times 3 \times 3 \times 2 \times 2 \times 5 \times 5$
$= 3600$ **Ans**

(h)

2	136, 102, 85, 51, 34, 170
17	68, 51, 85, 51, 17, 85
3	4, 3, 5, 3, 1, 5
5	4, 1, 5, 1, 1, 5
2	4, 1, 1, 1, 1, 1
2	2, 1, 1, 1, 1, 1
	1, 1, 1, 1, 1, 1

$\therefore$L.C.M.
$= 2 \times 17 \times 3 \times 5 \times 2 \times 2$
$= 2040$ **Ans.**

(i)

2	4, 6, 8, 12, 16, 15
2	2, 3, 4, 6, 8, 15
2	1, 3, 2, 3, 4, 15
2	1, 3, 1, 3, 2, 15
3	1, 3, 1, 3, 1, 5
5	1, 1, 1, 1, 1, 5
	1, 1, 1, 1, 1, 1

$\therefore$L.C.M.
$= 2 \times 2 \times 2 \times 2 \times 3 \times 5 = 240$ **Ans.**

Exercise 6H

1. $\text{L.C.M.} = \dfrac{\text{First number} \times \text{second number}}{\text{H.C.F.}} = \dfrac{20 \times 30}{10}$

$\therefore$ L.C.M. $= 60$ **Ans.**

2. $\text{H.C.F.} = \dfrac{\text{Product of two number}}{\text{L.C.M.}} = \dfrac{1536}{96} = 16$

$\therefore$ H.C.F. $= 16$ **Ans.**

3. $\text{L.C.M.} = \dfrac{\text{First number} \times \text{second number}}{\text{H.C.F.}} = \dfrac{12 \times 16}{4} = 48$

$\therefore$ L.C.M. $= 48$ **Ans.**

4.

5. $\text{Other number} = \dfrac{\text{H.C.F.} \times \text{L.C.M.}}{\text{First number}} = \dfrac{29 \times 435}{87} = 145$

$\therefore$ The other number $= 145$ **Ans.**

6. $\text{L.C.M.} = \dfrac{\text{First number} \times \text{second number}}{\text{H.C.F.}} = \dfrac{1232 \times 1617}{77} = 25872$

$\therefore$ L.C.M. $= 25872$ **Ans.**

7. First we find the LCM of 12, 24 and 36.

2	12, 24, 36
2	6, 12, 18
3	3, 6, 9
3	1, 2, 3
2	1, 2, 1
	1, 1, 1

LCM of 12, 24 and $36 = 2 \times 2 \times 3 \times 3 \times 2 = 72$

Hence, the smallest number $= 72 + 5 = 77$ **Ans.**

Exercise 6I

1. (a) In 3500 unit place digit is 0. So, it is divisible by 2, 5 and 10.
(b) In 105 unit place digit is 5. So, it is divisible by 5.
(c) In 2100 unit place digit is 0. So, it is divisible by 2, 5 and 10.
(d) In 2705 unit place digit is 5. So, it is divisible by 5.
(e) In 1690 unit place digit is 0. So, it is divisible by 2, 5 and 10.
(f) In 1780 unit place digit is 0. So, it is divisible by 2, 5 and 10.

2. (a) Sum of the digits of $1024 = 1 + 0 + 2 + 4 = 7$
7 is not divisible by 3. So, 1024 is not divisible by 6.
hundreds, tens and ones digit of 1024 is 024 which is divisible by 8. So, 1024 will be divisible by 8.

(b) In 618 unit place digit is 8 which is divisible by 2.
Sum of the digiti of $618 = 6 + 1 + 8 = 15$
15 is divisible by 3. So, 618 will be divisible by 3.
$\because$ 618 is divisible by 2 and 3. So, 618 will be divisible by 6.
618 is not divisible by 8.

(c) 7688 is divisible by 2 but not divisible by 3. So, 7688 is not divisible by 6.
In 7688 hundreds, tens and unit place digit is 688
688 is divisible by 8. So, 7688 will be divisible by 8.

(d) 8016 is divisible by 2.
Sum of the digits of $8016 = 8 + 0 + 1 + 6 = 15$
15 is divisible by 3. So, 8016 is divisible by 3.
8016 is divisible by 2 and 3. So, 8016 will be divisible by $2 \times 3 = 6$.
In 8016 hundreds, tens and ones place digit is 16 which is divisible by 8. So, 8016 will be divided by 8.

(e) 516 is divisible by 2 and 3. So, 516 will be divisible by $2 \times 3 = 6$.
516 is not divisible by 8.

(f) 8152 is divisible by 2 but not divisible by 3. So, 8152 is not divisible by $2 \times 3 = 6$.
In 8152 hundreds, tens and oines digit are 152.
152 is divisible by 8, So 8152 will be divisible by 8.

7. Fractional Numbers

Exercise 7 A

1. (a) $6\frac{1}{5} = \frac{(6\times5)+1}{5} = \frac{30+1}{5} = \frac{31}{5}$ **Ans.**

(b) $10\frac{2}{3} = \frac{(10\times3)+2}{3} = \frac{30+2}{3} = \frac{32}{3}$ **Ans.**

(c) $3\frac{7}{8} = \frac{(8\times3)+7}{8} = \frac{24+7}{8} = \frac{31}{8}$ **Ans.**

(d) $8\frac{1}{6} = \frac{(8\times6)+1}{6} = \frac{48+1}{6} = \frac{49}{6}$ **Ans.**

2. (a) $\frac{41}{4} = 10\frac{1}{4}$ **Ans.** (b) $\frac{52}{5} = 10\frac{2}{5}$ **Ans.**

(c) $\frac{87}{14} = 6\frac{3}{14}$ **Ans.** (d) $\frac{39}{8} = 4\frac{7}{8}$ **Ans.**

3. (a) $\frac{64}{80} = \frac{64\div16}{80\div16}$ [$\because$ HCF of 64 and 80 is 16]

$= \frac{4}{5}$

Hence, the required lowest form is $\frac{4}{5}$. **Ans.**

(b) $\frac{60}{92} = \frac{60\div4}{92\div4}$ [$\because$ HCF of 60 and 92 is 4]

$\frac{15}{23}$

Hence, the required lowest form is $\frac{15}{23}$. **Ans.**

(c) $\frac{350}{400} = \frac{350\div50}{400\div50}$ [HCF of 350 and 400 is 50]

$= \frac{7}{8}$

Hence, required lowest form is $\frac{7}{8}$. **Ans.**

(d) $\frac{315}{320} = \frac{315\div5}{320\div5}$ [$\because$ HCF of 315 and 320 is 5]

$= \frac{63}{64}$

Hence, required lowest form is $\frac{63}{64}$. **Ans.**

4. (a) $\frac{2}{5}=\frac{2\times2}{5\times2}=\frac{4}{10};\frac{2\times3}{5\times3}=\frac{6}{15};\frac{2\times4}{5\times4}=\frac{8}{20}$

$\therefore$ Three equivalent fractions are $\frac{4}{10}$, $\frac{6}{15}$ and $\frac{8}{20}$ **Ans.**

(b) $\frac{3}{7}=\frac{3\times2}{7\times2}=\frac{6}{14};\frac{3}{7}=\frac{3\times3}{7\times3}=\frac{9}{21};\frac{3}{7}=\frac{3\times4}{7\times4}=\frac{12}{28}$

$\therefore$ Three equivalent fractions are $\frac{6}{14}$, $\frac{9}{21}$ and $\frac{12}{28}$ **Ans.**

(c) $\frac{1}{5}=\frac{1\times2}{5\times2}=\frac{2}{10};\frac{1\times3}{5\times3}=\frac{3}{15};\frac{1\times4}{5\times4}=\frac{4}{20}$

$\therefore$ Three equivalent fractions are $\frac{2}{10}$, $\frac{3}{15}$ and $\frac{4}{20}$ **Ans.**

(d) $\frac{3}{8}=\frac{3\times2}{8\times2}=\frac{6}{16};\frac{3\times3}{8\times3}=\frac{9}{24};\frac{3\times4}{8\times4}=\frac{12}{32}$

$\therefore$ Three equivalent fractions are $\frac{6}{16}$, $\frac{9}{24}$ and $\frac{12}{32}$ **Ans.**

5. (a) $\frac{18}{19}>\frac{16}{17}$ (b) $\frac{11}{13}<\frac{17}{19}$ (c) $4\frac{2}{9}<5\frac{5}{11}$

(d) $6\frac{3}{8}<8\frac{1}{2}$

6. (a) L.C.M. of 15, 9, 4, 30 and 12 is 180.

$\frac{8}{15}=\frac{8\times12}{15\times12}=\frac{96}{180};\frac{7}{9}=\frac{7\times20}{9\times20}=\frac{140}{180};\frac{3}{4}=\frac{3\times45}{4\times45}=\frac{135}{180};$

$\frac{19}{30}=\frac{19\times6}{30\times6}=\frac{114}{180};\frac{11}{12}=\frac{11\times15}{12\times15}=\frac{165}{180}$ **Ans.**

Descending order are $\frac{165}{180}>\frac{140}{180}>\frac{135}{180}>\frac{114}{180}>\frac{96}{180}$

Hence, Descending order are $\frac{11}{12}>\frac{7}{9}>\frac{3}{4}>\frac{19}{30}>\frac{8}{15}$ **Ans.**

(b) L.C.M. of 9, 18, 6, 12 and 10 is 180.

$\frac{2}{9}=\frac{2\times20}{9\times20}=\frac{40}{180};\frac{5}{18}=\frac{5\times10}{18\times10}=\frac{50}{180};\frac{5}{6}=\frac{5\times30}{6\times30}=\frac{150}{180};$

$\frac{7}{12}=\frac{7\times15}{12\times15}=\frac{105}{180};\frac{9}{10}=\frac{9\times18}{10\times18}=\frac{162}{180}$

$\therefore$ Descending order are $\frac{162}{180}>\frac{150}{180}>\frac{105}{180}>\frac{50}{180}>\frac{40}{180}$ **Ans.**

Hence, Descending order are $\frac{9}{10} > \frac{5}{6} > \frac{7}{12} > \frac{5}{18} > \frac{2}{9}$. **Ans.**

7. (a) LC.M. of 4, 2, 8, 7 and 14 is 56.

$\frac{3}{4} = \frac{3\times14}{4\times14} = \frac{42}{56}; \frac{1}{2} = \frac{1\times28}{2\times28} = \frac{28}{56}; \frac{5}{8} = \frac{5\times7}{8\times7} = \frac{35}{56};$

$\frac{4}{7} = \frac{4\times8}{7\times8} = \frac{32}{56}; \frac{3}{14} = \frac{3\times4}{14\times4} = \frac{12}{56}$

$\therefore$Ascending order are $\frac{12}{56} < \frac{28}{56} < \frac{32}{56} < \frac{35}{56} < \frac{42}{56}$

Hence, ascending order are $\frac{3}{14} < \frac{1}{2} < \frac{4}{7} < \frac{5}{8} < \frac{3}{4}$. **Ans.**

(b) L.C.M. of 15, 5, 12, 6 and 20 is 60.

$\frac{13}{15} = \frac{13\times4}{15\times4} = \frac{52}{60}; \frac{4}{5} = \frac{4\times12}{5\times12} = \frac{48}{60}; \frac{7}{12} = \frac{7\times5}{12\times5} = \frac{35}{60};$

$\frac{5}{6} = \frac{5\times10}{6\times10} = \frac{50}{60}; \frac{11}{20} = \frac{11\times3}{20\times3} = \frac{33}{60}$

$\therefore$Ascending order are $\frac{33}{60} < \frac{35}{60} < \frac{48}{60} < \frac{50}{60} < \frac{52}{60}$

Hence, ascending order are $\frac{11}{20} < \frac{7}{12} < \frac{4}{5} < \frac{5}{6} < \frac{13}{15}$ **Ans.**

8. (a) $\frac{2}{5} + \frac{3}{4} + \frac{3}{6} = \frac{24+45+30}{60} = \frac{99}{60} = 1\frac{39}{30}$ **Ans.**

(b) $\frac{5}{12} + \frac{7}{8} + \frac{12}{3} = \frac{10+21+96}{24} = \frac{127}{24} = 5\frac{7}{24}$ **Ans.**

(c) $\frac{10}{3} + \frac{17}{4} + \frac{26}{5} = \frac{200+255+312}{60} = \frac{767}{60} = 12\frac{47}{60}$ **Ans.**

(d) $\frac{13}{2} + \frac{19}{6} + \frac{22}{5} = \frac{195+95+132}{30} = \frac{422}{30} = 14\frac{2}{30} = 14\frac{1}{15}$ **Ans.**

9. (a) $8 - \frac{3}{7} = \frac{56-3}{7} = \frac{53}{7} = 7\frac{4}{7}$ **Ans.**

(b) $4 - \frac{2}{5} = \frac{20-2}{5} = \frac{18}{5} = 3\frac{3}{5}$ **Ans.**

(c) $\frac{15}{18} - \frac{3}{16} = \frac{120-27}{144} = \frac{93}{144} = \frac{31}{48}$ **Ans.**

(d) $\frac{31}{5} - \frac{13}{6} = \frac{186-65}{30} = \frac{121}{30} = 4\frac{1}{30}$ **Ans.**

(e) $\frac{101}{12}-\frac{17}{3}=\frac{101-68}{12}=\frac{33}{12}=2\frac{9}{12}$ **Ans.**

(f) $\frac{137}{15}-\frac{181}{30}=\frac{274-181}{30}=\frac{93}{30}=3\frac{3}{30}$ **Ans.**

Exercise 7 B

1. (a) $\frac{2}{9}\times 4=\frac{2\times 4}{9\times 1}=\frac{8}{9}$ **Ans.** (b) $\frac{12}{13}\times 65=12\times 5=60$ **ans.**

(c) $\frac{3}{20}\times 5=\frac{3}{4}$ **Ans.** (d) $\frac{3}{11}\times 44=3\times 4=12$ **Ans.**

(e) $\frac{6}{16}\times 32=6\times 2=12$ **Ans.** (f) $3\frac{3}{4}\times 8=\frac{15}{4}\times 8=15\times 2=30$ **Ans.**

(g) $3\frac{3}{8}\times 10=\frac{27}{8}\times 10=\frac{135}{4}=33\frac{3}{4}$ **Ans.**

(h) $6\frac{2}{5}\times 15=\frac{32}{5}\times 15=96$ **Ans.**

(i) $3\frac{5}{27}\times 18=\frac{86}{27}\times 18=\frac{172}{3}=57\frac{1}{3}$ **Ans.**

(j) $4\frac{3}{25}\times 25=\frac{103}{25}\times 25=103$ **Ans.**

(k) $8\frac{5}{16}\times 64=\frac{133}{16}\times 64=532$ **Ans.**

(l) $6\frac{3}{7}\times 35=\frac{45}{7}\times 35=45\times 5=225$ **Ans.**

Exercise 7 C

1. (a) $\frac{3}{5}\times\frac{4}{7}=\frac{3\times 4}{5\times 7}=\frac{12}{35}$ **Ans.** (b) $\frac{16}{17}\times\frac{14}{15}=\frac{16\times 14}{17\times 15}=\frac{224}{255}$ **Ans.**

(c) $\frac{5}{8}\times\frac{24}{15}=\frac{5\times 24}{8\times 15}=\frac{3}{3}=1$ **Ans.** (d) $\frac{2}{3}\times\frac{6}{7}=\frac{2\times 6}{3\times 7}=\frac{4}{7}$ **Ans.**

(e) $4\frac{1}{4}\times\frac{4}{5}=\frac{17}{4}\times\frac{4}{5}=\frac{17}{5}=3\frac{2}{5}$ **Ans.**

(f) $1\frac{8}{9}\times 4\frac{3}{4}=\frac{17}{9}\times\frac{19}{4}=\frac{323}{36}=8\frac{35}{36}$ **Ans.**

(g) $3\frac{1}{11}\times\frac{24}{15}=\frac{34}{11}\times\frac{24}{15}=\frac{816}{165}=4\frac{52}{55}$ **Ans.**

(h) $6\frac{2}{3}\times 2\frac{4}{7}=\frac{20}{3}\times\frac{18}{7}=\frac{20\times 6}{1\times 7}=\frac{120}{7}=17\frac{1}{7}$ **Ans.**

(i) $3\frac{5}{6}\times 1\frac{1}{17}=\frac{23}{6}\times\frac{18}{17}=\frac{23\times 3}{1\times 17}=\frac{69}{17}=4\frac{1}{17}$ **Ans.**

(j) $3\frac{1}{7}\times 1\frac{2}{9}=\frac{22}{7}\times\frac{11}{9}=\frac{242}{63}=3\frac{53}{63}$ **Ans.**

(k) $1\frac{1}{12}\times 2\frac{1}{5}=\frac{13}{12}\times\frac{11}{5}=\frac{143}{60}=2\frac{23}{60}$ **Ans.**

(l) $1\frac{1}{2}\times 2\frac{1}{5}=\frac{3}{2}\times\frac{11}{5}=\frac{33}{10}=3\frac{3}{10}$ **Ans.**

Exercise 7 D

1. (a) $4\frac{1}{2}\times 3\frac{1}{5}\times 2\frac{1}{2}=\frac{9}{2}\times\frac{16}{5}\times\frac{5}{2}=\frac{9\times 8}{2}=9\times 4=36$ **Ans.**

(b) $3\frac{1}{4}\times 1\frac{5}{12}\times 1\frac{1}{2}=\frac{13}{4}\times\frac{17}{12}\times\frac{3}{2}=\frac{663}{96}=6\frac{29}{32}$ **Ans.**

(c) $\frac{12}{13}\times\frac{26}{27}\times 1\frac{6}{7}=\frac{12\times 26}{13\times 27}\times\frac{13}{7}=\frac{4\times 26}{9\times 7}=\frac{104}{63}=1\frac{41}{63}$ **Ans.**

(d) $3\frac{2}{3}\times 2\frac{1}{4}\times\frac{20}{33}=\frac{11}{3}\times\frac{9}{4}\times\frac{20}{33}=\frac{1\times 9\times 5}{3\times 1\times 3}=\frac{45}{9}=5$ **Ans.**

(e) $1\frac{3}{16}\times 1\frac{8}{9}\times 1\frac{3}{4}=\frac{19}{16}\times\frac{17}{9}\times\frac{7}{4}=\frac{2261}{576}=3\frac{533}{576}$ **Ans.**

(f) $6\frac{1}{2}\times 4\frac{2}{3}\times 4\frac{1}{7}=\frac{13}{2}\times\frac{14}{3}\times\frac{29}{7}$

$=\frac{13\times 2\times 29}{2\times 3\times 1}=\frac{13\times 29}{3}=\frac{377}{3}=125\frac{2}{3}$ **Ans.**

(g) $2\frac{2}{7}\times 3\frac{1}{5}\times 4\frac{1}{3}=\frac{16}{7}\times\frac{16}{5}\times\frac{13}{3}=\frac{3328}{105}=31\frac{73}{105}$ **Ans.**

(h) $6\frac{1}{3}\times 2\frac{2}{11}\times 4\frac{1}{4}=\frac{19}{3}\times\frac{24}{11}\times\frac{17}{4}=\frac{19\times 6\times 17}{3\times 11\times 1}=\frac{1938}{33}=58\frac{8}{11}$ **Ans.**

(i) $3\frac{2}{3}\times 2\frac{1}{17}\times 1\frac{3}{4}=\frac{11}{3}\times\frac{35}{17}\times\frac{7}{4}=\frac{2695}{204}=13\frac{43}{204}$ **Ans.**

Exercise 7 E

1. Cost of 1 litre diesel = $₹55\frac{1}{2}=₹\frac{111}{2}$

$\therefore$ Cost of $6\frac{1}{2}$ litre $= \frac{13}{2}$ litre diesel

$$= ₹\frac{111}{2} \times \frac{13}{2} = \frac{₹1443}{4} = ₹360\frac{3}{4}$$ **Ans.**

2. Cost of a ticket $= ₹25\frac{1}{2} = ₹\frac{51}{2}$

$\therefore$ Cost of 10 tickets $= ₹\frac{51}{2} \times 10 = ₹51 \times 5 = ₹255$ **Ans.**

3. Passed students $= 100 \times \frac{3}{5} = 20 \times 3 = 60$

$\therefore$ Failed students $= 100 - 60 = 40$ **Ans.**

4. Salary gave his father $= ₹12000 \times \frac{7}{8} = ₹1500 \times 7 = ₹10{,}500$

Saved salary $= ₹12000 - ₹10500 = 1500$ **Ans.**

5. Students like to play cricket $= 45 \times \frac{2}{5} = 9 \times 2 = 18$

Students like to play football $= 45 \times \frac{1}{5} = 9$

Students like to play both games $= (18 + 9) = 27$

$\therefore$ Students don't play any game $= 45 - 27 = 18$ **Ans.**

6. Spent money on clothes $= ₹1500 \times \frac{3}{10} = ₹450$

Spent money on costmetics $= ₹1500 \times \frac{2}{5} = ₹600$

Total spent money $= ₹450 + ₹600 = ₹1050$

$\therefore$ Left money $= ₹1500 - ₹1050 = ₹450$ **Ans.**

7. Milk consumed in a week $= 13\frac{1}{7} \times 7\,l = \frac{92}{7} \times 7l = 92\,l$ **Ans.**

8. Cost of 1 m ribbon $= ₹26\frac{1}{4} = ₹\frac{105}{4}$

$\therefore$ Cost of 8 m ribbon $= ₹\frac{105}{4} \times 8 = ₹105 \times 2 = ₹210$ **Ans.**

Exercise 7 F

1. $\frac{3}{7} \div 28 = \frac{3}{7} \times \frac{1}{28} = \frac{3}{196}$ **Ans.** (b) $\frac{1}{16} \div 12 = \frac{1}{16} \times \frac{1}{12} = \frac{1}{192}$ **Ans.**

(c) $\frac{1}{12} \div 5 = \frac{1}{12} \times \frac{1}{5} = \frac{1}{60}$ **Ans.** (d) $16 \div \frac{1}{13} = 16 \times 13 = 208$ **Ans.**

(e) $\frac{14}{5} \div \frac{7}{10} = \frac{14}{5} \times \frac{10}{7} = \frac{2}{1} \times \frac{2}{1} = 4$ **Ans.**

(f) $\frac{17}{18} \div \frac{21}{32} = \frac{17}{18} \times \frac{32}{21} = \frac{17}{9} \times \frac{16}{21} = \frac{272}{189} = 1\frac{83}{189}$ **Ans.**

(g) $\frac{15}{18} \div \frac{15}{16} = \frac{15}{18} \times \frac{16}{15} = \frac{1}{9} \times \frac{8}{1} = \frac{8}{9}$ **Ans.**

(h) $\frac{4}{9} \div 18 = \frac{4}{9} \times \frac{1}{18} = \frac{4}{162} = \frac{2}{81}$ **Ans.**

(i) $\frac{1}{15} \div 10 = \frac{1}{15} \times \frac{1}{10} = \frac{1}{150}$ **Ans.**

(j) $\frac{2}{7} \div \frac{7}{10} = \frac{2}{7} \times \frac{10}{7} = \frac{20}{49}$ **Ans.**

(k) $\frac{6}{9} \div \frac{2}{5} = \frac{6}{9} \times \frac{5}{2} = \frac{3}{9} \times \frac{5}{1} = \frac{1}{3} \times \frac{5}{1} = \frac{5}{3} = 1\frac{2}{3}$ **Ans.**

(l) $6\frac{2}{5} \div 2\frac{2}{3} = \frac{32}{5} \div \frac{8}{3} = \frac{32}{5} \times \frac{3}{8} = \frac{4 \times 3}{5 \times 1} = \frac{12}{5} = 2\frac{2}{5}$ **Ans.**

2. (a) $\frac{33}{8} \div \frac{27}{4} = \frac{33}{8} \times \frac{4}{27} = \frac{11}{2} \times \frac{1}{9} = \frac{11}{18}$ **Ans.**

(b) $\frac{23}{4} \div \frac{7}{2} = \frac{23}{4} \times \frac{2}{7} = \frac{23}{2} \times \frac{1}{7} = \frac{23}{14} = 1\frac{9}{14}$ **Ans.**

(c) $\frac{11}{2} \div \frac{11}{3} = \frac{11}{2} \times \frac{3}{11} = \frac{1}{2} \times \frac{3}{1} = \frac{3}{2} = 1\frac{1}{2}$ **Ans.**

(d) $\frac{20}{3} \div \frac{10}{3} = \frac{20}{3} \times \frac{3}{10} = \frac{2}{1} \times \frac{1}{1} = 2$ **Ans.**

(e) $\frac{13}{4} \div \frac{9}{8} = \frac{13}{4} \times \frac{8}{9} = \frac{13}{1} \times \frac{2}{9} = \frac{26}{9} = 2\frac{8}{9}$ **Ans.**

(f) $\frac{5}{2} \div \frac{5}{4} = \frac{5}{2} \times \frac{4}{5} = \frac{1}{1} \times \frac{2}{1} = 2$ **Ans.**

(g) $\frac{11}{3} \div \frac{37}{9} = \frac{11}{3} \times \frac{9}{37} = \frac{11}{1} \times \frac{3}{37} = \frac{33}{37}$ **Ans.**

(h) $\frac{10}{3} \div \frac{10}{9} = \frac{10}{3} \times \frac{9}{10} = \frac{1}{1} \times \frac{3}{1} = 3$ **Ans.**

(i) $\frac{8}{7} \div \frac{29}{14} = \frac{8}{7} \times \frac{14}{29} = \frac{8}{1} \times \frac{2}{29} = \frac{16}{29}$ **Ans.**

(j) $\frac{17}{5} \div \frac{26}{6} = \frac{17}{5} \times \frac{6}{26} = \frac{17}{5} \times \frac{3}{13} = \frac{51}{65}$ **Ans.**

(k) $\frac{19}{8} \div \frac{4}{3} = \frac{19}{8} \times \frac{3}{4} = \frac{57}{32} = 1\frac{25}{32}$ **Ans.**

(l) $\frac{11}{5} \div \frac{13}{5} = \frac{11}{5} \times \frac{5}{13} = \frac{11}{13}$ **Ans.**

Exercise 7 G

1. 9 tins hold oil $= 30\frac{1}{4}\,l = \frac{121}{4}\,l$

$\therefore$ 1 tin hold oil $= \left(\frac{121}{4} \div 9\right) l = \frac{121}{4}\,l \times \frac{1}{9} = \frac{121}{36}\,l = 3\frac{13}{36}\,l$

Hence, 1 tin hold oil $= 3\frac{13}{36}\,l$ **Ans.**

2. Cost of $3\frac{1}{2}$ kg sweets = ₹ 290

$\therefore$ Cost of 1 kg sweet = ₹ $290 \div 3\frac{1}{2}$ = ₹ $290 \div \frac{7}{2}$

= ₹ $290 \times \frac{2}{7}$ = ₹ $\frac{580}{7}$ = ₹ $82\frac{6}{7}$

Hence, cost of 1 kg sweet = ₹ $82\frac{6}{7}$ **Ans.**

3. Fraction $= \frac{80}{500}$ [$\because$ ₹ 5 = 500 paise]

$= \frac{8}{50} = \frac{4}{25}$

Hence, the required fraction is $\frac{4}{25}$. **Ans.**

4. Product of two numbers $= 4\frac{1}{3} = \frac{13}{3}$

One number = 5

$\therefore$ Other number $= \frac{13}{3} \div 5 = \frac{13}{3} \times \frac{1}{5} = \frac{13}{15}$

Hence, other number is $\frac{13}{15}$. **Ans.**

5. A bus travelled in $6\frac{1}{4}$ hr $= 246$ km

$\therefore$ A bus travelled in 1 hr $= 246\text{ km} \div 6\frac{1}{4} = 246\text{ km} \div \frac{25}{4}$

$= 246\text{ km} \times \frac{4}{25} = \frac{984}{25}\text{ km} = 39\frac{9}{25}\text{ km}$

Hence, a bus $39\frac{9}{25}$ km it travels in 1 hour. **Ans.**

6. Number of pieces cut $= 16\text{ m} \div \frac{4}{5}\text{ m} = 16 \times \frac{5}{4} = 4 \times 5 = 20$

Hence, the number of pieces $= 20$ **Ans.**

7. Price of $3\frac{1}{2}$ m of cloth = ₹ $70\frac{3}{4}$ = ₹ $\frac{283}{4}$

Price of 1 m of cloth = ₹ $\frac{283}{4} \div 3\frac{1}{2}$ = ₹ $\frac{283}{4} \div \frac{7}{2}$

= ₹ $\frac{283}{4} \times \frac{2}{7}$ = ₹ $\frac{283}{14}$ = ₹ $20\frac{3}{14}$

Hence, the cost of 1 m cloth is ₹ $20\frac{3}{14}$ **Ans.**

8. Each child got sweet $= 6\frac{2}{5}\text{ kg} \div 9 = \frac{32}{5} \times \frac{1}{9} = \frac{32}{45}\text{ kg}$

Hence, each child got $\frac{32}{45}$ kg sweet. **Ans.**

Math Lab Activity

1. (a) $\frac{37}{3} = 12\frac{1}{3}$ (b) $\frac{14}{5} = 2\frac{4}{5}$ (c) $\frac{17}{7} = 2\frac{3}{7}$

(d) $\frac{43}{11} = 3\frac{10}{11}$

2. (a) $\frac{2}{7} = \frac{4}{14}, \frac{6}{21}$ (b) $\frac{3}{8} = \frac{6}{16}, \frac{9}{24}$ (c) $\frac{4}{13} = \frac{8}{26}, \frac{12}{39}$

(d) $\frac{7}{10} = \frac{14}{20}, \frac{21}{30}$

3. (a) $\frac{6}{21} < \frac{15}{7}$ (b) $\frac{12}{15} > \frac{3}{17}$ (c) $\frac{13}{8} > \frac{12}{9}$ (d) $1\frac{6}{7} > \frac{3}{2}$

4. (a) $\frac{6}{11} = \frac{12}{22}$ (b) $\frac{14}{5} = \frac{28}{10}$ (c) $\frac{17}{7} = \frac{34}{14}$ (d) $\frac{43}{11} = \frac{86}{22}$

5. (a) $\frac{2}{5} + \frac{2}{5} = \frac{4}{5}$ (b) $\frac{15}{17} - \frac{8}{17} = \frac{7}{17}$

(c) $\frac{12}{15} - \frac{4}{15} = \frac{8}{15}$ (d) $\frac{3}{11} \times \frac{6}{5} = \frac{18}{55}$

Skill Test-2

A. 1. (b) 6 2. (a) 11 3. (c) 54 4. (d) 29 5. (b) 18 6. (b) 6
7. (d) 42 8. (b) 2 9. (c) $5\frac{2}{3}$ 10. (b) $4\frac{1}{5}$ 11. (d) $\frac{5}{7}$

8. Decimal

Exercise 8 A

1. (a) Twenty three point six nine. (b) One point zero three.
(c) Four point three seven. (d) Four point seven eight.
(e) Six point four. (f) Thirty one point three four eight.
(g) Seventeen point eight one.
(h) Twenty-seven point three five.
(i) Twenty one point zero one one
(j) Sixty-three point two zero nine.
(k) Thirty five point eight.
(l) One hundred eighty seven point three one two.

2. (a) 0.85 (b) 0.365 (c) 1.92 (d) 12.068 (e) 32.502
(f) 112.389

3. (a) Six and five tenths $= 6 + \frac{5}{10} = 6 + 0.5 = 6.5$

(b) $18 + \frac{3}{10} = 18 + 0.3 = 18.3$

(c) $12 + \frac{29}{100} = 12 + 0.29 = 12.29$

(d) $2 + \frac{54}{1000} = 2 + 0.054 = 2.054$

(e) $180+\frac{36}{100}=180+0.36=180.36$

(f) $508+\frac{254}{1000}=508+0.254=508.254$

4. (a) Three point eight seven. (b) Four point five six.
(c) Two point four. (d) Twelve point three four six.
(e) Thirteen point four five six. (f) Twelve point zero nine.
(g) Three hundred seventeen point one eight five.
(h) Eight point five one three.
(i) Three hundred sixty three point four two five.
(j) Seventeen point zero eight two.
(k) Three hundred fifty eight point three one two.
(l) Three hundred fifteen point two six.

Exercise 8 B

1. (a) $6+\frac{6}{10}=6+0.6=6.6$ **Ans.**

(b) $5+\frac{3}{10}+\frac{2}{100}=5+0.3+0.02=5.32$ **Ans.**

(c) $80+6+\frac{9}{10}+\frac{5}{100}=80+6+0.9+0.05=86.95$ **Ans.**

(d) $20+8+\frac{1}{10}+\frac{4}{100}+\frac{6}{1000}=20+8+0.1+0.04+0.006=28.146$ **Ans.**

(e) $30+\frac{7}{10}+\frac{4}{100}=30+0.7+0.04=30.74$ **Ans.**

(f) $80+3+\frac{3}{100}+\frac{5}{1000}=80+3+0.03+0.005=83.035$ **Ans.**

2. (a) $6+0.8=6.8$ (b) $19+0.3+0.05=19.35$
(c) $80+5+0.8+0.06=85+0.86=85.86$
(d) $60+8+0.9+0.09=68+0.99=68.99$
(e) $0.3+0.03+0.003=0.33+0.003=0.333$
(f) $20+0.03+0.008=20+0.038=20.038$
(g) $700+60+5+0.3+0.06+0.008=765+0.368=765.368$
(h) $600+20+4+0.6+0.09+0.008=624+0.698=624.698$

3. (a) $\frac{2}{5}=\frac{2\times2}{5\times2}=\frac{4}{10}=0.4$ **Ans.** (b) $\frac{3}{5}=\frac{3\times2}{5\times2}=\frac{6}{10}=0.6$ **Ans.**

(c) $\frac{32}{20}=\frac{32\times5}{20\times5}=\frac{160}{100}=1.60$ **Ans.** (d) $\frac{6}{20}=\frac{6\times5}{20\times5}=\frac{30}{100}=0.3$ **Ans.**

(e) $\frac{6}{25}=\frac{6\times4}{25\times4}=\frac{24}{100}=0.24$ **Ans.** (f) $\frac{28}{25}=\frac{28\times4}{25\times4}=\frac{112}{100}=1.12$ **Ans.**

(g) $\frac{39}{200}=\frac{39\times5}{200\times5}=\frac{195}{1000}=0.195$ **Ans.**

(h) $\frac{46}{50}=\frac{46\times2}{50\times2}=\frac{92}{100}=0.92$ **Ans.**

(i) $\frac{17}{50}=\frac{17\times2}{50\times2}=\frac{34}{100}=0.34$ **Ans.** (j) $\frac{3}{8}=\frac{3\times125}{8\times125}=\frac{375}{1000}=0.375$ **Ans.**

(k) $\frac{619}{500}=\frac{619\times2}{500\times2}=\frac{1238}{1000}=1.238$ **Ans.**

(l) $\frac{5}{8}=\frac{5\times125}{8\times125}=\frac{625}{1000}=0.625$ **Ans.**

4. (a) $5.8=\frac{58}{10}=\frac{29}{5}=5\frac{4}{5}$ **Ans.** (b) $38.5=\frac{385}{10}=\frac{77}{2}=38\frac{1}{2}$ **Ans.**

(c) $614.9=\frac{6149}{10}=614\frac{9}{10}$ **Ans.** (d) $6.38=\frac{638}{100}=\frac{319}{50}=6\frac{19}{50}$ **Ans.**

(e) $94.63=\frac{9463}{100}=94\frac{63}{100}$ **Ans.** (f) $832.84=\frac{83284}{100}=832\frac{84}{100}$ **Ans.**

(g) $6.056=\frac{6056}{1000}=6\frac{56}{1000}$ **Ans.** (h) $74.958=\frac{74958}{1000}=74\frac{958}{1000}$ **Ans.**

(i) $552.605=\frac{552605}{1000}=552\frac{605}{1000}$ **Ans.**

5. (a) $3.8=3+0.8$ (b) $19.34=10+9+0.3+0.04$

(c) $68.19=60+8+0.1+0.09$ (d) $35.80=30+5+0.8+0$

(e) $19.998=10+9+0.9+0.09+0.008$

(f) $35.308=30+5+0.3+0+0.008$

(g) $32.164=30+2+0.1+0.06+0.004$

(h) $17.382=10+7+0.3+0.08+0.002$

(i) $617.389=600+10+7+0.3+0.08+0.009$

6. (a) $\frac{9}{10}=0.9$ (b) $\frac{38}{10}=3.8$ (c) $\frac{44}{100}=0.44$

(d) $\frac{35}{100}=0.35$ (e) $\frac{459}{10}=45.9$ (f) $\frac{16}{100}=0.16$

(g) $\frac{356}{1000} = 0.356$ (h) $\frac{813}{100} = 8.13$ (i) $\frac{38}{1000} = 0.038$

(j) $\frac{13}{100} = 0.13$ (k) $\frac{153}{1000} = 0.153$ (l) $\frac{263}{1000} = 0.263$

(m) $\frac{395}{10} = 39.5$ (n) $\frac{3586}{100} = 35.86$ (o) $\frac{261}{100} = 2.61$

(p) $\frac{124}{1000} = 0.124$

Exercise 8 C

1. (a) Like decimals are 4.7, 1.8; 5.14, 3.01

(b) Like decimals are 25.1, 1.6; 1.09, 9.80

(c) Like decimals are 2.56, 1.09; 416.801, 52.893

(d) Like decimals are 342.711, 4.181; 686, 323.02

(e) Like decimals are 3.45, 813.44; 713.245, 643.381

(f) Like decimals are 878.351, 10.345; 9.35, 786.38

2. (a) The maximum digits after decimal point is 3.

$\therefore 13.3 = 13.300$, $4.15 = 4.150$, $6.78 = 6.780$ and
$18.398 = 18.398$

Hence, required like decimals are 13.300, 4.150, 6.780 and 18.398. **Ans.**

(b) The maximum digits after decimal point by 3.

$\therefore 5.16 = 5.160$, $5.6 = 5.600$, $5.661 = 5.661$ and $2.136 = 2.136$

Hence, required like decimals are
5.160, 5.600, 5.661 and 2.136. **Ans.**

(c) The maximum digits after decimal point is 3.

$\therefore 1.5 = 1.500$, $3.21 = 3.210$, $64.8 = 64.800$, $7.895 = 7.895$

Hence, required like decimals are
1.500, 3.210, 64.800, 7.895 **Ans.**

(d) The maximum digits after decimal point is 3.

$\therefore 16.34 = 16.340$, $14.8 = 14.800$, $17.961 = 17.961$, $3.126 = 3.126$

Hence, required like decimals are
16.340, 14.800, 17.961 and 3.126.

(e) The maximum digits after decimal point is 3.

$\therefore 7.9 = 7.900$, $261.584 = 261.584$, $23.02 = 23.020$, $18.363 = 18.363$

Hence, required like decimals are
7.900, 261.584, 23.020 and 18.363 **Ans.**

(f) The maximum digits after decimal point is 3.

$\therefore 66.616 = 66.616, 6.61 = 6.610, 6.1 = 6.100, 17.382 = 17.382$

Hence, required like decimal are

66.616, 6.610, 6.100 and 17.382.

Exercise 8 D

1. (a) $8.21 > 6.6$ (b) $2.62 < 3.268$ (c) $22.51 < 32.49$

(d) $96.5 > 26.50$ (e) $3.497 < 7.56$ (f) $1.6 < 2.156$

2. (a) $68.56 = \frac{6856}{100}, 49.7 = \frac{497}{10}, 36.01 = \frac{3601}{100}$

Now we convert given fractions into same denominatoir as 100.

$\therefore \quad \frac{6856}{100}; \frac{497}{10} = \frac{497 \times 10}{10 \times 10} = \frac{4970}{100}; \frac{3601}{100}$

L.C.M. of 100, 10 and 100 is 100

$\therefore$ Ascending order are $\frac{3601}{100} < \frac{4970}{100} < \frac{6856}{100}$

Hence, ascending order are $36.01 < 49.7 < 68.56$ **Ans.**

(b) $11.85 = \frac{11.85}{100}, 30.58 = \frac{30.58}{100}, 15.80 = \frac{15.80}{100}$

$\therefore$ Ascending order are $\frac{1185}{100} < \frac{1580}{100} < \frac{3058}{100}$

Hence, ascending order are $11.85 < 15.80 < 30.58$ **Ans.**

(c) $12.758 = \frac{12758}{1000}, 32.8 = \frac{328}{10}, 22.59 = \frac{2259}{100}$

$\therefore \frac{12758}{1000}; \frac{328}{10} = \frac{328 \times 100}{10 \times 100} = \frac{32800}{1000}; \frac{2259}{100} = \frac{2259 \times 10}{100 \times 10} = \frac{22590}{1000}$

L.C.M. of 1000, 10 at 100 is 1000.

$\therefore$ Ascending order are $\frac{12758}{1000} < \frac{22590}{1000} < \frac{32800}{1000}$

Hence, ascending order are $12.758 < 22.59 < 32.8$ **Ans.**

(d) $6.505 = \frac{6505}{1000}, 6.050 = \frac{6050}{1000}, 2.5 = \frac{250}{100}$

$\therefore \quad \frac{6505}{1000}; \frac{6050}{1000}; \frac{250}{100} = \frac{250 \times 10}{100 \times 10} = \frac{2500}{1000}$

L.C.M. of 1000, 1000 and 100 is 1000

$\therefore$ Ascending order are $\frac{2500}{1000} < \frac{6050}{1000} < \frac{6505}{1000}$

Hence, ascending order are $2.50 < 6.050 < 6.505$ **Ans.**

3. (a) $11.52 = \frac{11.52}{100}, 22.0 = \frac{22}{1}, 21.57 = \frac{21.57}{100}$

$\therefore \frac{1152}{100}; \frac{22}{1} = \frac{22 \times 100}{1 \times 100} = \frac{2200}{100}; \frac{2157}{100}$

L.C.M. of 100, 1 and 100 is 100.

$\therefore$ Descending order are $\frac{2200}{100} > \frac{2157}{100} > \frac{1152}{100}$

Hence, descending order are $22 > 21.57 > 11.52$ **Ans.]**

(b) $8.972 = \frac{8.972}{1000}, 8.7 = \frac{87}{10}, 8.990 = \frac{8990}{1000}$

$\therefore \frac{8972}{1000}; \frac{87}{10} = \frac{87 \times 100}{10 \times 100} = \frac{8700}{1000}; \frac{8990}{1000}$

L.C.M. of 1000, 10 and 1000 is 1000.

$\therefore$ Descending order are $\frac{8990}{1000} > \frac{8972}{1000} > \frac{8700}{1000}$

Hence, descending order are $8.990 > 8.972 > 8.7$ **Ans.**

(c) $1.0078 = \frac{10078}{10000}, 1.0870 = \frac{10870}{10000}, 1.0780 = \frac{10780}{10000}$

$\therefore$ Descending order are $\frac{10870}{10000} > \frac{10780}{10000} > \frac{10078}{10000}$

Hence, descending order are $1.0870 > 1.0780 > 1.0078$ **Ans.**

(d) $61.0 = \frac{61}{1}, 60.96 = \frac{6096}{100}, 61.69 = \frac{6169}{100}$

$\therefore \frac{61}{1} = \frac{61 \times 100}{1 \times 100} = \frac{6100}{100}; \frac{6096}{100}; \frac{6169}{100}$

L.C.M. of 1, 100 and 100 is 100.

$\therefore$ Descending order are $\frac{6169}{100} > \frac{6100}{100} > \frac{6096}{100}$

Hence, descending order are $61.69 > 61 > 60.963$ **Ans.**

Exercise 8 E

1. (a) $15.8 + 13.24 + 4.68 = 33.72$ **Ans.**

(b) $32.56 + 12.9 + 13.46 = 58.92$ **Ans.**

(c) $41.746 + 18.54 + 12.85 = 73.136$ **Ans.**

(d) $225.5 + 38.497 + 9.06 = 273.057$ **Ans.**

(e) $37.81 + 38.12 + 3.475 = 79.405$ **Ans.**

(f) $4.37 + 1.698 + 2.548 = 8.616$ **Ans.**

2. (a)
$$\begin{array}{r} 217.906 \\ 312.585 \\ +\ 13.602 \\ \hline 544.093 \end{array}$$
(b)
$$\begin{array}{r} 256.294 \\ 352.005 \\ +\ 19.906 \\ \hline 628.205 \end{array}$$
(c)
$$\begin{array}{r} 367.285 \\ 284.310 \\ +216.005 \\ \hline 867.600 \end{array}$$

(d)
$$\begin{array}{r} 216.800 \\ 312.995 \\ +412.469 \\ \hline 942.264 \end{array}$$
(e)
$$\begin{array}{r} 748.508 \\ 319.560 \\ 421.843 \\ +\ 30.020 \\ \hline 1519.931 \end{array}$$
(f)
$$\begin{array}{r} 97.387 \\ 2.905 \\ 317.412 \\ +581.303 \\ \hline 999.007 \end{array}$$

3. (a) $45.8 - 33.72 = 12.08$ **Ans.** (b) $432.08 - 316.579 = 115.501$ **Ans.**
(c) $44.875 - 17.382 = 27.493$ **Ans.**
(d) $511.237 - 6.245 = 504.992$ **Ans.**
(e) $68.3 - 12.455 = 55.845$ **Ans.**
(f) $138.375 - 23.805 = 114.57$ **Ans.**

4. (a)
$$\begin{array}{r} 619.709 \\ -318.655 \\ \hline 301.054 \end{array}$$
(b)
$$\begin{array}{r} 520.010 \\ -314.727 \\ \hline 205.283 \end{array}$$
(c)
$$\begin{array}{r} 637.317 \\ -218.582 \\ \hline 418.735 \end{array}$$

(d)
$$\begin{array}{r} 825.570 \\ -658.499 \\ \hline 167.071 \end{array}$$
(e)
$$\begin{array}{r} 413.128 \\ -311.600 \\ \hline 101.528 \end{array}$$
(f)
$$\begin{array}{r} 381.682 \\ -125.342 \\ \hline 256.340 \end{array}$$

5. Total length of ribbon = 20 m
Cut ribbon = 6.65 m + 2.6 m = 9.25 m
Remaining ribbon = 20 m − 9.25 m = 10.75 m
Hence, remaining ribbon = 10.75 m **Ans.**

6. Cost of a book = ₹ 175.25
Cost of a pen = ₹ 32.50
Cost of a box = ₹ 35
∴ Money spent altogether = ₹ 175.25 + ₹ 32.50 + ₹ 35 = ₹ 242.75
Hence, ₹ 242.75 spent altogether. **Ans.**

7. Sum of 15.7 and 13.86 = 15.7 + 13.86 = 29.56
Now, sum of 12.61 and 13.825 = 12.61 + 13.825 = 26.435
∴ Difference = 29.56 − 26.435 = 3.125 **Ans.**

8. Total points = 19.25 + 18.75 + 19 = 57
Hence, the total points = 57 **Ans.**

9. Return money = ₹ 1000 − ₹ 685.65 = ₹ 314.35
Hence, ₹ 314.35 will return the shopkeeper. **Ans.**

10. Number should be added $= 40 - 37.98 = 2.02$
Hence, 2.02 should be added. **Ans.**

Exercise 8 F

1. (a) 0.03 has two decimal places. 0.4 has one decimal place
Total decimal place $= 2 + 1 = 3$ Hence, $0.03 \times 0.4 = 0.012$ **Ans.**

(b) 2.3 has one decimal place. 0.2 has one decimal place.
Total decimal place $= 1 + 1 = 2$
Hence, $2.3 \times 0.2 = 0.46$ **Ans.**

(c) 0.3 has 1 decimal place. 0.2 has 1 decimal place.
Total $= 1 + 1 = 2$
Hence, $0.3 \times 0.2 = 0.06$ **Ans.**

(d) 1.2 has 1 decimal place. 9 to 0 decimal place.
Total $= 1 + 0 = 1$
Hence, $1.2 \times 9 = 10.8$ **Ans.**

(e) 7.2 has 1 decimal place. 0.12 has 2 decimal places.
Total $= 1 + 2 = 3$
Hence, $7.2 \times 0.12 = 0.864$ **Ans.**

(f) 4.4 has 1 decimal place. 3.8 has 1 decimal place.
Total $= 1 + 1 = 2$
Hence, $4.4 \times 3.8 = 16.72$ **Ans.**

2. (a)
$$\begin{array}{r} 24.5 \\ \times\ 4.4 \\ \hline 980 \\ 9800 \\ \hline 107.80 \end{array}$$
Hence, $24.5 \times 4.4 = 107.80$ **Ans.**

(b)
$$\begin{array}{r} 2.764 \\ \times\ 0.8 \\ \hline 2.2112 \end{array}$$
Hence, $2.764 \times 0.8 = 2.2112$ **Ans.**

(c)
$$\begin{array}{r} 23.14 \\ \times\ 7.6 \\ \hline 13884 \\ 161980 \\ \hline 175864 \end{array}$$
Hence, $23.14 \times 7.6 = 175.864$ **Ans.**

(d)
$$\begin{array}{r} 1.72 \\ \times 1.36 \\ \hline 1032 \\ 5160 \\ 17200 \\ \hline 2.3392 \end{array}$$
Hence, $1.72 \times 1.36 = 2.3392$ **Ans.**

(e)
$$\begin{array}{r} 6.9 \\ \times\ 9.2 \\ \hline 138 \\ 6210 \\ \hline 63.48 \end{array}$$
Hence, $6.9 \times 9.2 = 63.48$ **Ans.**

(f)
$$\begin{array}{r} 26.6 \\ \times\ 1.2 \\ \hline 532 \\ 2660 \\ \hline 31.92 \end{array}$$
Hence, $26.6 \times 1.2 = 31.92$ **Ans.**

(g)
$$\begin{array}{r} 38.74 \\ \times\ 3.9 \\ \hline 34866 \\ 116220 \\ \hline 151.086 \end{array}$$

Hence,
$38.74 \times 3.9 = 151.086$ **Ans.**

(h)
$$\begin{array}{r} 5.7 \\ \times\ 4 \\ \hline 22.8 \end{array}$$

Hence, $5.7 \times 4 = 22.8$ **Ans.**

(i)
$$\begin{array}{r} 30.5 \\ \times\ 6.5 \\ \hline 1525 \\ 18300 \\ \hline 198.25 \end{array}$$

Hence, $30.5 \times 6.5 = 198.25$ **Ans.**

3. (a) $2.725 \times 1000 = 2725$ **Ans.** (b) $31.4 \times 100 = 3140$ **Ans.**
(c) $4.6 \times 10 = 46$ **Ans.** (d) $1.4 \times 100 = 140$ **Ans.**
(e) $41.5 \times 1000 = 41500$ **Ans.** (f) $24.51 \times 10 = 245.1$ **Ans.**
(g) $3.145 \times 10 = 31.45$ **Ans.** (h) $1.9 \times 100 = 190$ **Ans.**
(i) $317.18 \times 100 = 31718$ **Ans.**

4. (a) 1000 (b) 100 (c) 100 (d) 1000 (e) 100 (f) 10
(g) 100 (h) 1000

5. (a) $0.5 \times 0.6 = \frac{5}{10} \times \frac{6}{10} = \frac{30}{100} = 0.03$

(b) $0.4 \times 0.03 = \frac{4}{10} \times \frac{3}{100} = \frac{12}{1000} = 0.012$

(c) $2.2 \times 0.3 = \frac{22}{10} \times \frac{3}{10} = \frac{66}{100} = 0.66$

(d) $0.9 \times 0.14 = \frac{9}{10} \times \frac{14}{100} = \frac{126}{1000} = 0.126$

(e) $2.1 \times 0.06 = \frac{21}{10} \times \frac{6}{100} = \frac{126}{1000} = 0.126$

(f) $0.16 \times 0.3 = \frac{16}{100} \times \frac{3}{10} = \frac{48}{1000} = 0.048$

(g) $32 \times 0.106 = 32 \times \frac{106}{100} = \frac{3392}{1000} = 3.392$

(h) $8 \times 0.06 = 8 \times \frac{6}{100} = \frac{48}{100} = 0.48$

(i) $0.6 \times 0.3 = \frac{6}{10} \times \frac{3}{10} = \frac{18}{100} = 0.18$

6. Weight of 1 tin = 3.56 kg
∴ Weight of 25 tins = 3.56 kg
× 25 = 89 kg

$$\begin{array}{r} 3.56 \\ \times\ 2.5 \\ \hline 1780 \\ 7120 \\ \hline 89.00 \\ \hline \end{array}$$

Hence, 89 kg is the weight of 25 tins. **Ans.**

7. Cost of one litre petrol = ₹ 52.75
∴ Cost of 20 litres petrol = ₹ 52.75 × 20 = ₹ 1055

$$\begin{array}{r} 52.75 \\ \times\ 20 \\ \hline 0000 \\ 105500 \\ \hline 1055.00 \\ \hline \end{array}$$

Hence, cost of 20 litres petrol = ₹ 1055 **Ans.**

8. Cost of one book = ₹ 178.75
∴ Cost of 35 books
= ₹ 178.75 × 35 = ₹ 6256.25

$$\begin{array}{r} 178.75 \\ \times\ 35 \\ \hline 89375 \\ 536250 \\ \hline 6256.25 \\ \hline \end{array}$$

Hence, the cost of 35 books = ₹ 6256.25 **Ans.**

9. Length of 1 piece ribbon = 3.3 m
Length of 20 piece of ribbon = 3.3 m × 20 m = 66 m

$$\begin{array}{r} 3.3 \\ \times\ 2.0 \\ \hline 00 \\ 660 \\ \hline 66.0 \\ \hline \end{array}$$

Hence, the length of ribbon of 20 piece = 66 m **Ans.**

10. Distance covered in one hour = 7.75 km
∴ Distance covered in 6 hours = 7.75 km × 6 = 46.5 km

$$\begin{array}{r} 7.75 \\ \times\ \ 6 \\ \hline 46.50 \\ \hline \end{array}$$

Hence, Amit 46.5 km covered in 6 hours. **Ans.**

Exercise 8 G

1. (a) 22.5 ÷ 10 = 2.25 **Ans.**
(b) 4.4 ÷ 10 = 0.44 **Ans.**
(c) 63.78 ÷ 100 = 0.6378 **Ans.**
(d) 7.02 ÷ 100 = 0.0702 **Ans.**
(e) 356.24 ÷ 1000 = 0.35624 **Ans.**
(f) 35.1 ÷ 1000 = 0.0351 **Ans.**
(g) 68.365 ÷ 100 = 0.68365 **Ans.**
(h) 44.813 ÷ 1000 = 0.044813 **Ans.**

2. (a)

```
      9.12
   ____________
4 ) 3 6.4 8
    –3 6
    ------
      0 4
      –4
      ---
      0 8
      –8
      ---
      0
```

(b)

```
      4.555
   ____________
12 ) 5 4.6 6 0
     –4 8
     ------
       6 6
      –6 0
      ----
       6 6
       6 0
       ---
         6 0
        –6 0
        ----
           0
```

(c)

```
      5.67
   ____________
23 ) 1 3 0.4 1
     –1 1 5
     ------
       1 5 4
      –1 3 8
      ------
         1 6 1
        –1 6 1
        ------
             0
```

(d)

```
      0.5125
   ____________
16 ) 8.2 0 0 0
     –8 0
     ----
       2 0
      –1 6
      ----
         4 0
        –3 2
        ----
           8 0
          –8 0
          ----
             0
```

(e)

```
      0.107
   ____________
80 ) 8.5 6 0
     –8 0
     ----
       5 6 0
      –5 6 0
      ------
           0
```

(f)

```
      0.21544
   ____________
25 ) 5.3 8 6 0 0
     –5 0
     ----
       3 8
      –2 5
      ----
         1 3 6
        –1 2 5
        ------
           1 1 0
          –1 0 0
          ------
             1 0 0
            –1 0 0
            ------
                 0
```

(g)

```
      1.65
   ____________
92 ) 1 5 1.8 0
     –9 2
     ----
       5 9 8
       5 5 2
       -----
           4 6 0
          –4 6 0
          ------
               0
```

(h)

```
      602.05
   ____________
12 ) 7 2 2 4.6 0
     –7 2
     ----
       2 4
      –2 4
      ----
           6 0
          –6 0
          ----
             0
```

(i)

```
      4.756
   ____________
200 ) 9 5 1.2 0 0
      –8 0 0
      -------
        1 5 1 2
       –1 4 0 0
       --------
          1 1 2 0
         –1 0 0 0
         --------
            1 2 0 0
           –1 2 0 0
           --------
                0
```

(j)
$$\begin{array}{r} 1.653 \\ 90\overline{)\,148.770} \\ -90\downarrow\downarrow\downarrow \\ \hline 587\downarrow \\ -540 \\ \hline 477 \\ -450 \\ \hline 270 \\ -270 \\ \hline 0 \end{array}$$

(k)
$$\begin{array}{r} 3.56 \\ 25\overline{)\,89.00} \\ -75\downarrow\downarrow \\ \hline 140\downarrow \\ -125 \\ \hline 150 \\ -150 \\ \hline 0 \end{array}$$

(l)
$$\begin{array}{r} 3.26 \\ 23\overline{)\,74.98} \\ -69\downarrow\downarrow \\ \hline 59\downarrow \\ -46 \\ \hline 138 \\ -138 \\ \hline 0 \end{array}$$

3. (a)
$$\begin{array}{r} 0.4 \\ 5\overline{)\,2.0} \\ -20 \\ \hline 0 \end{array}$$
Hence, $\frac{2}{5} = 0.4$ **Ans.**

(b)
$$\begin{array}{r} 0.625 \\ 8\overline{)\,50.00} \\ -48\downarrow\downarrow \\ \hline 20\downarrow \\ -16 \\ \hline 40\downarrow \\ -40 \\ \hline 0 \end{array}$$
Hence, $\frac{5}{8} = 0.625$ **Ans.**

(c) $4\frac{9}{16} = \frac{73}{16}$
$$\begin{array}{r} 4.5625 \\ 16\overline{)\,73.0000} \\ -64\downarrow\downarrow\downarrow \\ \hline 90\downarrow\downarrow \\ -80\downarrow \\ \hline 100\downarrow \\ -96 \\ \hline 40\downarrow \\ -32 \\ \hline 80 \\ -80 \\ \hline 0 \end{array}$$
Hence, $4\frac{9}{16} = 4.5625$ **Ans.**

(d) $6\frac{6}{25} = \frac{156}{25}$
$$\begin{array}{r} 6.24 \\ 25\overline{)\,156.00} \\ -150\downarrow\downarrow \\ \hline 60\downarrow \\ -50 \\ \hline 100\downarrow \\ -100 \\ \hline 0 \end{array}$$
Hence, $6\frac{6}{25} = 6.24$ **Ans.**

(e) $4\frac{3}{40} = \frac{163}{40}$
$$\begin{array}{r} 4.075 \\ 40\overline{)\,163.000} \\ -160\downarrow\downarrow \\ \hline 300\downarrow \\ -280 \\ \hline 200 \\ -200 \\ \hline 0 \end{array}$$
Hence, $4\frac{3}{40} = 4.075$ **Ans.**

4. One week's income of zeeshan = ₹ 478.66
∴Daily income
= ₹ 478.66 ÷ 7 = ₹ 68.38

```
      68.38
   7 ) 478.66
      -42
       58
      -56
        26
       -21
         56
        -56
          0
```

Hence, zeeshan's daily income is ₹ 68.38. **Ans.**

5. Total money = ₹ 787.5
Total child = 21
∴Each child got money
= ₹ 787.5 ÷ 21 = ₹ 37.5

```
      37.5
  21 ) 787.5
      -63
       157
      -147
        105
       -105
          0
```

Hence, ₹ 37.5 each child got. **Ans.**

Math Lab Activity

1. The like decimals are 34.615, 2.083, 344.980, 1.190, 463.201

2. (a) $\frac{85}{10} = 8.5$ (b) $\frac{217}{1000} = 0.217$
(c) $\frac{19}{100} = 0.19$ (d) $\frac{552}{10} = 55.2$

3. (a) $70 + 3 + \frac{4}{100} + \frac{6}{1000}$
$= 73 + 0.04 + 0.006 = 73.046$
(b) $500 + 8 + \frac{7}{10} + \frac{4}{100} + \frac{2}{1000}$
$= 508 + 0.7 + 0.04 + 0.002$
$= 508.742$
(c) $\frac{6}{10} + \frac{2}{100} + \frac{1}{1000}$
$= 0.6 + 0.02 + 0.001 = 0.621$
(d) $8 + \frac{3}{100} + \frac{6}{1000} + \frac{8}{10000}$
$= 8 + 0.03 + 0.006 + 0.0008$
$= 8.0368$

4. (a)

```
      3.8
   5 ) 19.0
      -15
       40
      -40
        0
```

Hence, $\frac{19}{5} = 3.8$

(b)

```
      0.92
  25 ) 23.00
      -225
        50
       -50
         0
```

Hence, $\frac{23}{25} = 0.92$

(c)
$$\begin{array}{r} 0.62 \\ 50\overline{)\,3\,1.0\,0} \\ -3\,0\,0\downarrow \\ \hline 1\,0\,0 \\ -1\,0\,0 \\ \hline 0 \end{array}$$

Hence, $\frac{31}{50} = 0.62$

(d)
$$\begin{array}{r} 3.1 \\ 20\overline{)\,6\,2.0} \\ -6\,0\downarrow \\ \hline 2\,0 \\ -2\,0 \\ \hline 0 \end{array}$$

Hence, $\frac{62}{20} = 3.1$

5. (a) $0.008 < 0.009$

(b) $5.05 < 6.053$

(c) $43.6 > 42.4$

(d) $2.586 > 2.506$

9. Money

Exercise 9 A

1. Cost of 24 dolls = ₹ 3240

$\therefore$ Cost of 1 doll = ₹ $3240 \div 24$ = ₹ 135

$\therefore$ Cost of 30 dolls = ₹ 135×30 = ₹ 4050

Hence, cost of 30 dolls = ₹ 4050 **Ans.**

2. Cost of one litre milk = ₹ 37.75

$\therefore$ Cost of 38 litres milk ₹ 37.75×38 = ₹ 1434.5

Hence, the cost of 38 litres milk = ₹ 1434.5 **Ans.**

3. The cost of 17 pens = ₹ 323

$\therefore$ Cost of 1 pen = ₹ $323 \div 17$ = ₹ 19

$\therefore$ The cost of 49 pens = ₹ 19×49 = ₹ 931

Hence, the cost of 49 pens = ₹ 931 **Ans.**

4. Cost of one pen = ₹ 78

$\therefore$ The cost of 22 pens = ₹ 78×22 = ₹ 1716

Hence, the cost of 22 pens = ₹ 1716 **Ans.**

5. Cost of 8 T.V. sets = ₹ 83720

$\therefore$ Cost of 1 T.V. set = ₹ $83720 \div 8$ = ₹ 10465

$\therefore$ Cost of 37 T.V. sets = ₹ 10465×37 = ₹ 387205 **Ans.**

6. The cost of one school bag = ₹ 475.50

$\therefore$ The cost of 27 school bags = ₹ 475.50×27 = ₹ 12838.50

Hence, the cost of 27 school bags = ₹ 12838.50 **Ans.**

Exercise 9 B

1. (a)

₹	p
24	45
36	23
+ 84	81
145	49

Hence,
₹ 24.45 + ₹ 36.23 + ₹ 84.81
= ₹ 145.49 **Ans.**

(b)

₹	p
35	00
39	00
+ 68	00
142	00

Hence,
₹ 35.00 + ₹ 39.00 + ₹ 68.00
= ₹ 142.00 **Ans.**

(c)

₹	p
1	35
1	76
+ 2	05
5	16

Hence, ₹ 1.35 + ₹ 1.76 + ₹ 2.05
= ₹ 5.16 **Ans.**

(d)

₹	p
30	05
65	30
+ 22	45
117	80

Hence,
₹ 30.05 + ₹ 65.30 + ₹ 22.45
= ₹ 117.8 **Ans.**

(e)

₹	p
2	50
23	70
+315	65
341	85

Hence,
₹ 2.50 + ₹ 23.70 + ₹ 315.65

= ₹ 341.85 **Ans.**

(f)

₹	p
40	35
45	90
+ 34	60
120	85

Hence,
₹ 40.35 + ₹ 45.90 + ₹ 34.60

= ₹ 120.85 **Ans.**

2. (a) (b)

(c)

42	42		
+38	38		
80	80		

₹	p
453	13
+ 645	29
1098	42

₹	p
320	61
+ 372	29
692	90

(d)
	₹	p
	325	38
+	232	65
	558	03

(e)
	₹	p
	470	25
+	82	98
	553	23

(f)
	₹	p
	37	50
+	43	20
	80	70

(g)
	₹	p
	226	65
+	345	32
	571	97

(h)
	₹	p
	400	10
+	390	97
	791	07

3. Cost of T.V. = ₹ 10, 750

Cost of refrigerator = ₹ 9756

∴Total cost = ₹ 10750 + ₹ 9756 = ₹ 20506

Hence, Mannu spent ₹ 20506 on these items. **Ans.**

4. Arti bought grocery = ₹ 368.55

Arti bought washing powder = ₹ 28.50

Arti bought tooth paste = ₹ 30.75

Money spent in all = ₹ 368.55 + ₹ 28.50 + ₹ 30.75 = ₹ 427.8 **Ans.**

Hence, Arti spent ₹ 427.8 in all.

5. Kannu collect money in all classes

= ₹ 253.00 + ₹ 368.00 + ₹ 186.00 = ₹ 807

Hence, Kannu collect the money ₹ 807. **Ans.**

Exercise 9 C

1. (a)
	₹	P
	1000	.00
–	910	.50
	89	.50

(b)
	₹	P
	830	.00
–	480	.25
	349	.75

(c)
	₹	P
	10	.00
–	00	.75
	9	.25

(d)
	₹	P
	99	.00
–	00	.90
	98	.10

(e)
	₹	P
	55	.00
–	48	.08
	6	.92

(f)
	₹	P
	500	.00
–	487	.35
	12	.65

2. (a)
	₹	p
	95	.27
–	34	.88
	60	.39

Hence, ₹ 95.27 – ₹ 34.88 = ₹ 60.39 **Ans.**

(b)
₹	p
83	.80
− 68	.10
15	.70

Hence, ₹ 83.80 − ₹ 68.10 = ₹ 15.70 **Ans.**

(c)
₹	p
3	.00
− 2	.43
0	.57

Hence, ₹ 3.00 − ₹ 2.43 = ₹ 0.57 **Ans.**

(d)
₹	p
74	.07
− 35	.70
38	.37

Hence, ₹ 74.07 − ₹ 35.70 = ₹ 38.37 **Ans.**

(e)
₹	p
67	.32
− 34	.65
32	.67

Hence, ₹ 67.32 − ₹ 34.65 = ₹ 32.67 **Ans.**

(f)
₹	p
88	.05
− 26	.25
61	.80

Hemce, ₹ 88.05 − ₹ 26.25 = ₹ 61.80 **Ans.**

3. (a)
₹	p
80	35
− 12	47
67	88

(b)
₹	p
52	40
− 18	85
33	55

(c)
₹	p
38	10
− 12	40
25	70

(d)
₹	p
328	15
− 259	64
68	48

(e)
₹	p
80	44
− 45	16
35	28

(f)
₹	p
2	98
− 1	39
1	59

(g)

	₹	p
	323	70
−	154	50
	169	20

(h)

	₹	p
	56	15
−	27	70
	28	45

4. Left money with Krishna =₹ 1000 –₹ 628.00 = ₹ 372.00

Hence, ₹ 372.00 left with him. **Ans.**

5. Left money with Punit = ₹ 356.65 – ₹ 118.75 = ₹ 237.9

Hence, ₹ 237.9 left with him. **Ans.**

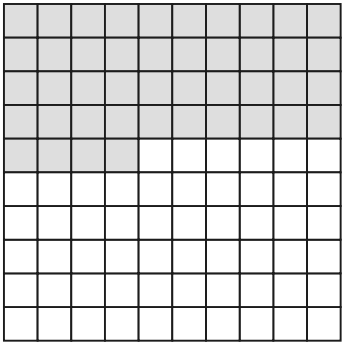
6. Left money with Priya = ₹ 100 – ₹ 83.50 = ₹ 16.50

Hence, ₹ 16.50 left with her. **Ans.**

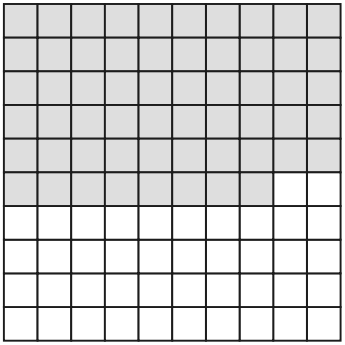
10. Percentage

Exercise 10 A

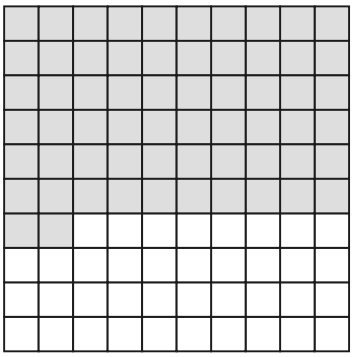
1. (a) $\frac{44}{100}$



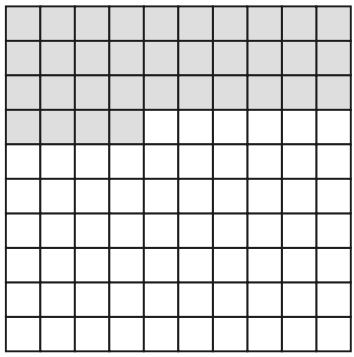
(b) $\frac{58}{100}$



(c) $\frac{62}{100}$



(d) $\frac{34}{100}$



2. (a) Out of 100 squares, 52 are shaded.

So, $\frac{52}{100}$ portion is shaded.

$\therefore \frac{52}{100} = 52\%$

(b) Out of 100 squares, 41 are shaded.

$\therefore \frac{41}{100} = 41\%$

(c) Out of 100 saquares, 55 are shaded.

$\therefore \frac{55}{100} = 55\%$

(d) Out of 100 squares, 64 are shaded.

$\therefore \frac{64}{100} = 64\%$

3. (a) $\frac{32}{100} = 32\%$ **Ans.** (b) $\frac{2}{100} = 2\%$ **Ans.**

(c) $\frac{100}{100} = 100\%$ **Ans.**

(d) $\frac{26}{25} = \frac{26 \times 4}{25 \times 4} = \frac{104}{100} = 104\%$ **Ans.**

(e) $4\frac{3}{10} = \frac{43}{10} = \frac{43 \times 10}{10 \times 10} = \frac{430}{100} = 430\%$ **Ans.** (f) $\frac{5}{100} = 5\%$ **Ans.**

(c) $432\% = \frac{432}{100} = 4.32$ **Ans.** (d) $356\% = \frac{356}{100} = 3.56$ **Ans.**

(e) $175\% = \frac{175}{100} = 1.75$ **Ans.** (f) $683\% = \frac{683}{100} = 6.83$ **Ans.**

5. (a) $1.35 = \frac{135 \times 100}{1 \times 100} = \frac{135}{100}\% = 135\%$ **Ans.**

(b) $2.08 = \frac{208 \times 100}{1 \times 100} = \frac{2.08}{100}\% = 208\%$ **Ans.**

(c) $1.6 = \frac{16}{10} = \frac{16 \times 10}{10 \times 10} = \frac{160}{100}\% = 160\%$ **Ans.**

(d) $0.95 = \frac{0.95 \times 100}{100} = \frac{95}{100}\% = 95\%$ **Ans.**

(e) $3.72 = \frac{3.72 \times 100}{1 \times 100} = \frac{372}{100}\% = 372\%$ **Ans.**

(f) $2.3 = \frac{23}{10} = \frac{23 \times 10}{10 \times 10} = \frac{230}{100}\% = 230\%$ **Ans.**

6. (a) $26\% = \frac{26}{100}$ **Ans.** (b) $32\% = \frac{32}{100}$ **Ans.**

(c) $3.35\% = \frac{335}{100} = \frac{335}{100}$ **Ans.** (d) $200\% = \frac{200}{100}$ **Ans.**

(e) $150\% = \frac{150}{100}$ **Ans.** (f) $317\% = \frac{317}{100}$ **Ans.**

7. (a) $22\% = \frac{22}{100} = \frac{11}{50}$ **Ans.** (b) $35\% = \frac{35}{100} = \frac{7}{20}$ **Ans.**

(c) $26\% = \frac{26}{100} = \frac{13}{50}$ **Ans.**

(d) $280\% = \frac{280}{100} = \frac{28}{10} = \frac{14}{5} = 2\frac{4}{5}$ **Ans.**

(e) $325\% = \frac{325}{100} = \frac{65}{20} = 3\frac{5}{20} = 3\frac{1}{4}$ **Ans.**

(f) $70\% = \frac{70}{100} = \frac{7}{10}$ **Ans.**

Exercise 10 B

1. (a) Percent of ₹ 40 is ₹ 8 $= \frac{₹\ 8}{₹\ 40} \times \frac{100}{100} = \left(\frac{8}{40} \times 100\right)\%$

$= \frac{1}{5} \times 100\% = 20\%$ **Ans.**

(b) Percent of ₹ 80 is 50 paise

$= \frac{50\,\text{paise}}{₹\ 8} \times \frac{100}{100} = \left(\frac{50}{8 \times 100} \times 100\right)\%$

[$\because$ ₹ 1 = 100 p]

$= \frac{50}{8}\% = 6\frac{2}{8}\% = 6\frac{1}{4}\%$ **Ans.**

(c) Percent of 7 m is 280 cm $= \frac{280\,\text{cm}}{7\,\text{m}} \times \frac{100}{100} = \left(\frac{280}{7 \times 100} \times 100\right)\%$

[$\because$ 1 m = 100 cm]

$= \frac{280}{7}\% = 40\%$ **Ans.**

(d) Percent of 2 kg is 840 g $= \frac{840\,\text{g}}{2\,\text{kg}} \times \frac{100}{100} = \left(\frac{840}{2 \times 1000} \times 100\right)\%$

[$\because$ 1 kg = 1000 g]

$= \frac{84}{2}\% = 42\%$ **Ans.**

(e) Percent of 60 is $18 = \frac{18}{60} \times \frac{100}{100} = \left(\frac{18}{60} \times 100\right)\% = 30\%$ **Ans.**

(f) Percent of ₹ 35 is

$₹\ 70 = \frac{₹\ 70}{₹\ 35} \times \frac{100}{100} = \left(\frac{70}{35} \times 100\right)\% = 200\%$ **Ans.**

2. (a) $20\%\ \text{of}\ 80 = 20 \times \frac{80}{100} = 16$ **Ans.**

(b) $40\%\ \text{of}\ ₹\ 800 = 40 \times ₹\ \frac{800}{100} = ₹\ 40 \times 8 = ₹\ 320$ **Ans.**

(c) $10\%\ \text{of}\ 5\ \text{kg} = 10 \times \frac{5}{100}\ \text{kg} = 0.5\ \text{kg}$ **Ans.**

(d) $28\frac{3}{4}\%\ \text{of}\ 10\ \text{m} = \frac{115}{4} \times \frac{10}{100}\ \text{m} = 2.875\ \text{m}$ **Ans.**

(e) $22\frac{1}{2}\%$ of $50 = \frac{45}{2} \times \frac{50}{100} = 11.25$ **Ans.**

(f) 37% of $80\text{ m} = 37 \times \frac{80}{100}\text{ m} = 29.6\text{ m}$ **Ans.**

Exercise 10 C

1. Total planted trees $= 120$
and died trees $= 24$

Percentage of died trees $= \frac{24}{120} \times 100\% = \frac{1}{5} \times 100\% = 20\%$

$\therefore$ Percentage of survived trees $= (100 - 20) = 80\%$

Hence, 80% trees are survived. **Ans.**

2. Percentage of Om's marks $= \left(\frac{17}{20} \times 100\right)\% = (17 \times 5)\% = 85\%$

and percentage of Kannu's marks

$= \left(\frac{22}{25} \times 100\right)\% = (22 \times 4)\% = 88\%$

$\because$ $88\% > 85\%$

Hence, Kannu's performance is better than Om's performance. **Ans.**

3. Percentage of Sonu's marks $= \left(\frac{18}{25} \times 100\right)\% = (18 \times 4)\% = 72\%$

Hence, 72% marks got by Sonu **Ans.**

4. Student passed in exam $= 80\%$ of 75

[$\because$ total appeared students $= 75$]

$\therefore$ passed students $= 80 \times \frac{75}{100} = 60$

Now, failed students $= (75 - 60) = 15$

Hence, 60 students passed and 15 students failed. **Ans.**

5. Brij had money = ₹ 800

$\therefore$ Brij gave money to his grand son $= 30\%$ of ₹ 800

$= ₹\ 30 \times \frac{800}{100} = ₹\ 240$

and he gave money to her granddaughter $= 25\%$ of ₹ 800

$= ₹\ 25 \times \frac{800}{100} = ₹\ 200$

Total gave money = ₹ 240 + ₹ 200 = ₹ 440
Now, money left with Brij = ₹ (800 − 440) = ₹ 360
Hence, ₹ 360 left with her. **Ans.**

6. Poonam got money on her birthday = ₹ 1000

$\therefore$ She spent money = 70% of ₹ 1000 = ₹$70 \times \frac{1000}{100}$ = ₹ 700

Now, save money = ₹ (1000 − 700) = ₹ 300
Hence, she saved ₹ 300. **Ans.**

Exercise 10 D

1. (a) C.P. = ₹ 400 and Profit = ₹ 50

S.P. = C.P. + Profit = ₹ 400 + ₹ 50 = ₹ 450
(b) C.P. = ₹ 1000 and Loss = ₹ 100
$\therefore$ S.P. = C.P. − Loss = ₹ 1000 − ₹ 100 = ₹ 900
(c) S.P. = ₹ 900 and Loss = ₹ 100
$\therefore$ C.P. = S.P. + Loss = ₹ 900 + ₹ 100 = ₹ 1000
(d) S.P. = ₹ 625 and Profit = ₹ 50
$\therefore$ C.P. = S.P. − Profit = ₹ 625 − ₹ 50 = ₹ 575
(e) C.P. = ₹ 320 and S.P. = ₹ 390
$\therefore$ S.P. > C.P. So we will get profit.
Profit = S.P. − C.P. = ₹ 390 − ₹ 320 = ₹ 70

2. $\because$ Selling price of television = ₹ 6345

and Loss = ₹ 885
$\therefore$ C.P. = S.P. + Loss = ₹ 6345 + ₹ 885 = ₹ 7230
Hence, the cost price of television = ₹ 7230 **Ans.**

3. $\because$ Cost price of second-hand scooter = ₹ 22325

and cost of repairing = ₹ 1485
$\therefore$ Total C.P. of second-hand scooter
= ₹ 22325 + ₹ 1485 = ₹ 23810
$\because$ Selling price of second-hand scooter = ₹ 25500
Since S.P. > C.P.
Profit = S.P. − C.P. = ₹ 25500 − ₹ 23810 = ₹ 1690
Hence, gain on the second-hand scooter = ₹ 1690 **Ans.**

4. C.P. of machines = ₹ 800

and S.P. of machine = ₹ 730
Since, C.P. > S.P.

$\therefore$ Loss = C.P. – S.P. = ₹ 800 – ₹ 730 = ₹ 70
Hence, loss on the machine = ₹ 70 **Ans.**

5. S.P. of a chair = ₹ 480

$\because$ Profit on chair = ₹ 70
$\therefore$ C.P. of chair = S.P. – Profit = ₹ 480 – ₹ 70 = ₹ 410
Hence, C.P. of chair = ₹ 410 **Ans.**

6. C.P. of radio = ₹ 800

and cost of repairing = ₹ 50
$\therefore$ Total C.P. of radio = ₹ 800 + ₹ 50 = ₹ 850
Profit = ₹ 60
S.P. of radio = ₹ 850 + ₹ 60 = ₹ 910
Hence, the selling price of radio = ₹ 910 **Ans.**

7. S.P. of almirah = ₹ 2000

Shopkeeper had loss = ₹ 220
$\therefore$ C.P. = S.P. + loss = ₹ 2000 + ₹ 220 = ₹ 2220
Hence, cost price of almirah = ₹ 2220 **Ans.**

Exercise 10 E

1. (a) P = ₹ 800, R = $4\frac{1}{2}$% per annum = $\frac{9}{2}$% per annum

T = 1 year

$\therefore$ S.I. = $\frac{P \times R \times T}{100}$ = ₹ $\frac{800 \times 9 \times 1}{100 \times 2}$ = ₹ 36

Hence, S.I. = ₹ 36 **Ans.**

(b) P = ₹ 1200, R = 8% per annum, Time = 2 years

$\therefore$ S.I. = $\frac{P \times R \times T}{100}$ = ₹ $\frac{1200 \times 8 \times 2}{100}$ = ₹ 192 **Ans.**

(c) P = ₹ 4000, R = 9% per annum, Time = $\frac{8}{12}$ years

$\therefore$ S.I. = $\frac{P \times R \times T}{100}$ = ₹ $\frac{4000 \times 9 \times 8}{100 \times 12}$ = ₹ 240 **Ans.**

(d) P = ₹ 3000, T = ₹ $7\frac{1}{2}$ years = $\frac{15}{2}$ years and R = 11%

$\therefore$ S.I. = $\frac{P \times R \times T}{100}$ = ₹ $\frac{3000 \times 11 \times 15}{2 \times 100}$ = ₹ $15 \times 11 \times 15$ = ₹ 2475

Hence, S.I. = ₹ 2475

(e) $P = ₹\ 700, R = 9\%$ per annum, $T = 3$ years

$$\therefore S.I. = \frac{P \times R \times T}{100} = ₹\ \frac{700 \times 9 \times 3}{100} = ₹\ 189$$

Hence, S.I. = ₹ 189 **Ans.**

2. $P = ₹\ 3500, R = 8\frac{1}{2}\% = \frac{17}{2}\%$ and $T = 3\frac{1}{2}$ years $= \frac{7}{2}$ years

$$S.I. = \frac{P \times R \times T}{100} = ₹\ \frac{3500 \times 17 \times 7}{2 \times 2 \times 100} = ₹\ \frac{35 \times 17 \times 7}{4} = ₹\ \frac{4165}{4}$$

$= ₹\ 1041.25$

Hence, S.I. = ₹ 1041.25

3. $P = ₹\ 40000, R = 20\%$ per annum, $T = 3$ years

$$\therefore S.I. = \frac{P \times R \times T}{100} = ₹\ \frac{40000 \times 20 \times 3}{100} = ₹\ 24000$$

Amount he had to pay = ₹ 40000 + ₹ 24000 = ₹ 64000

[$\because$ Amount = P + S.I.]

Hence, ₹ 64000 he has to pay after 3 years to clear his debt.

Ans.

4. $P_1 = ₹\ 30000, R_1 = 15\%$ per annum, $T = 2$ years

$$\therefore (S.I.)_1 = \frac{P_1 \times R_1 \times T}{100} = ₹\ \frac{30000 \times 15 \times 2}{100} = ₹\ 9000$$

Now, $P_2 = ₹\ 50000, R_2 = 10\%$ per annum, $T = 2$ years

$$\therefore (S.I.)_2 = \frac{P_2 \times R_2 \times T}{100} = ₹\ \frac{50000 \times 10 \times 2}{100} = ₹\ 10000$$

$\therefore$ Total amount $= (S.I.)_1 + (S.I.)_2 = ₹\ 9000 + ₹\ 10000 = ₹\ 19000$

Hence, ₹ 19000 he has to pay as interest **Ans.**

11. Length, Weight and Capacity

Exercise 11 A

1. (a) $18\text{ m }36\text{ cm} = 18\text{ m} + \frac{36}{100}\text{ m} = 18\text{ m} + 0.36\text{ m} = 18.36\text{ m}$ **Ans.**

(b) $32\text{ m }3\text{ cm} = 32\text{ m} + \frac{3}{100}\text{ m} = 32\text{ m} + 0.03\text{ m} = 32.03\text{ m}$ **Ans.**

(c) $26\text{ m }82\text{ cm} = 26\text{ m} + \frac{82}{100}\text{ m} = 26\text{ m} + 0.82\text{ m} = 26.82\text{ m}$ **Ans.**

(d) $25\text{ m }87\text{ cm} = 25\text{ m} + \frac{87}{100}\text{ m} = 25\text{ m} + 0.87\text{ m} = 25.87\text{ m}$ **Ans.**

(e) $68\text{ m }90\text{ cm} = 68\text{ m} + \frac{90}{100}\text{ m} = 68\text{ m} + 0.90\text{ m} = 68.90\text{ m}$ **Ans.**

(f) $87\text{ m }35\text{ cm} = 87\text{ m} + \frac{35}{100}\text{ m} = 87\text{ m} + 0.35\text{ m} = 87.35\text{ m}$ **Ans.**

2. (a) $18\text{ m }23\text{ cm} = 18 \times 100\text{ cm} + 23\text{ cm} = 1800\text{ cm} + 23\text{ cm}$
$= 1823\text{ cm}$ **Ans.**

(b) $27\text{ m }45\text{ cm} = 27 \times 100\text{ cm} + 45\text{ cm} = 2700\text{ cm} + 45\text{ cm}$
$= 2745\text{ cm}$ **Ans.**

(c) $133\text{ m }8\text{ cm} = 133 \times 100\text{ cm} + 8\text{ cm} = 13300\text{ cm} + 8\text{ cm}$
$= 13308\text{ cm}$ **Ans.**

(d) $16\text{ km }11\text{m }5\text{ cm} = 16 \times 100000\text{ cm} + 11 \times 100\text{ cm} + 5\text{ cm}$
$= 1600000\text{ cm} + 1100\text{ cm} + 5\text{ cm} = 1601105\text{ cm}$ **Ans.**

(e) $113\text{ m }85\text{ cm} = 113 \times 100\text{ cm} + 85\text{ cm} = 11300\text{ cm} + 85\text{ cm}$
$= 11385\text{ cm}$ **Ans.**

(f) $405\text{ m }25\text{ cm} = 405 \times 100\text{ cm} + 25\text{ cm} = 40500\text{ cm} + 25\text{ cm}$
$= 40525\text{ cm}$ **Ans.**

3. (a) $6723\text{ m} = 6000\text{ m} + 723\text{ m} = 6\text{ km} + 723\text{ m} = 6\text{ km }723\text{ m}$ **Ans.**

(b) $1004\text{ m} = 1000\text{ m} + 4\text{ m} = 1\text{ km} + 4\text{ m} = 1\text{ km }4\text{ m}$ **Ans.**

(c) $94085\text{ m} = 94000\text{ m} + 85\text{ m} = 94\text{ km} + 85\text{ m} = 94\text{ km }85\text{ m}$ **Ans.**

(d) $35325\text{ m} = 35000\text{ m} + 325\text{ m} = 35\text{ km} + 325\text{ m}$
$= 35\text{ km }325\text{ m}$ **Ans.**

(e) $69808\text{ m} = 69000\text{ m} + 808\text{ m} = 69\text{ km} + 808\text{ m} = 69\text{ km }808\text{ m}$ **Ans.**

(f) $36675\text{ m} = 36000\text{ m} + 675\text{ m} = 36\text{ km} + 675\text{ m} = 36\text{ km }675\text{ m}$ **Ans.**

4. (a) $9\text{ km }310\text{ m} = 9\times1000\text{ m} + 310\text{ m} = 9000\text{ m} + 310\text{ m} = 9310\text{ m}$

Ans.

(b) $26\text{ km }65\text{ m} = 26\times1000\text{ m} + 65\text{ m} = 26000\text{ m} + 65\text{ m}$

$= 26065\text{ m}$ **Ans.**

(c) $43\text{ km }18\text{ m} = 43\times1000\text{ m} + 18\text{ m} = 43000\text{ m} + 18\text{ m}$

$= 43018\text{ m}$ **Ans.**

(d) $29\text{ km }626\text{ m} = 29\times1000\text{ m} + 626\text{ m}$

$= 29000\text{ m} + 626\text{ m} = 29626\text{ m}$ **Ans.**

(e) $62\text{ km }39\text{ m} = 62\times1000\text{ m} + 39\text{ m} = 62000\text{ m} + 39\text{ m}$

$= 62039\text{ m}$ **Ans.**

(f) $44\text{ km }65\text{ m} = 44\times1000\text{ m} + 65\text{ m} = 44000\text{ m} + 65\text{ m}$

$= 44065\text{ m}$ **Ans.**

5. (a) $1635\text{ cm} = 1600\text{ cm} + 35\text{ cm} = \frac{1600}{100}\text{ m} + 35\text{ cm}$

$= 16\text{ m} + 35\text{ cm} = 16\text{ m }35\text{ cm}$ **Ans.**

(b) $42063 = 42000\text{ cm} + 63\text{ cm} = 420\text{ cm} + 63\text{ cm}$

$= 420\text{ m }63\text{ cm}$ **Ans.**

(c) $7633\text{ cm} = 7600\text{ cm} + 33\text{ cm} = 76\text{ m} + 33\text{ cm} = 76\text{ m }33\text{ cm}$

Ans.

(d) $4288\text{ cm} = 4200\text{ cm} + 88\text{ cm} = 42\text{ m} + 88\text{ cm} = 42\text{ m }88\text{ cm}$

Ans.

(e) $6004\text{ cm} = 6000\text{ cm} + 4\text{ cm} = 60\text{ m} + 4\text{ cm} = 60\text{ m }4\text{ cm}$ **Ans.**

(f) $8567\text{ cm} = 8500\text{ cm} + 67\text{ cm} = 85\text{ m} + 67\text{ cm} = 85\text{ m }67\text{ cm}$

Ans.

Exercise 11 B

1. (a)

km	m
46	370
+57	285
103	655

(b)

km	m
235	215
+176	380
411	595

(c)

km	m	cm
27	486	35
+28	496	83
55	983	18

(d)

km	m
18	162
34	376
+27	708
80	246

(e)

km	m	cm
29	238	62
47	194	20
+93	505	16
169	937	98

(f)

km	m	cm
37	187	31
18	312	22
+44	214	37
99	713	90

2. (a)

km	m
86	266
− 59	439
26	827

(b)

km	m
86	450
− 42	575
43	875

(c)

km	m
64	932
− 47	286
17	646

(d)

km	m
332	88
− 208	53
124	35

(e)

km	m	cm
137	170	85
−118	185	72
18	985	13

(f)

km	m	cm
138	212	33
−109	111	29
29	101	04

3. Distance covered by Priya = 13 m 16 cm
and distance covered by Anita = 31 m 80 cm
Now, more distance covered by Anita = 31 m 80 cm
− 13 m 16 cm
18 m 64 cm
Hence, 18 m 64 cm more distance covered by Anita than priya. **Ans.**

4. Distance covered by bus = 335 km 255 m
and distance covered by autorikshaw = 28 km 625 m
∴Distance covered by altogether = 335 km 255 m
+ 28 km 625 m
363 km 880 m
Hence, 363 km 880 m covered by altogether. **Ans.**

5. Total length of cloth = 62 m 65 cm + 89 m 56 cm
= 62 × 100 cm + 65 cm + 89 × 100 cm + 56 cm = 6200 cm + 65 cm + 8900 cm + 56 cm = 15221 cm = 152 m 21 cm
Hence, total length of cloth = 152 m 21 cm **Ans.**

6. Total length of wire = 200 m
used wire = 159 m 27 cm

m	cm
200	00
− 159	27
40	73

∴left wire = 200 m − 159 m 27 cm = 40 m 73 cm
Hence, 40 m 73 cm wire left in the roll. **Ans.**

Exercise 11 C

1. (a)

kg	g
35	165
+29	125
64	290

(b)

kg	g
35	165
+29	125
64	290

(c)

kg	g
137	165
+832	137
969	302

(d)

kg	g
393	274
+522	538
915	812

(e)

kg	g
208	286
+971	757
1180	043

(f)

kg	g
387	412
+218	315
605	727

2. (a)

kg	g
375	140
−246	375
128	765

(b)

kg	g
503	107
−282	430
220	677

(c)

kg	g
726	345
−492	682
233	663

(d)

kg	g
878	412
−695	507
182	905

(e)

kg	g
405	406
−94	627
310	779

(f)

kg	g
417	385
−215	418
201	967

3. Weighs of bag of floor = 20 kg
and weighs of floor = 17 kg 375 g
∴Floor left with Sumit = 20 kg − 17 kg 375 g = 2 kg 625 g

kg	g
20	000
− 17	375
2	625

Hence, 2 kg 625 g floor left with Sumit. **Ans.**

4. Weight of potatoes = 32 kg 430 g
Weight of tomatoes = 16 kg 645 g
and weight of onions = 14 kg 285 g
∴Total weight of all vegetables = 32 kg 430 g + 16 kg 645 g + 14 kg 285 g = 63 kg 360 g

kg	g
32	430
16	645
+ 14	285
63	360

Hence, 63 kg 360 g vegetables he bought from the shop. **Ans.**

5. Weight of jug with milk = 24 kg 230 g
and weight of empty jug = 2 kg 780 g
∴ Weight of milk in the jug = 24 kg 230 g − 2 kg 780 g
= 21 kg 450 g
Hence, the weight of milk in the jug = 21 kg 450 g **Ans.**

6. Weight of Mayur = 49 kg 250 g
weight of Prateek = 32 kg 830 g
and weight of Om = 18 kg 575 g
Total weight of these three students = 49 kg 250 g + 32 kg 830 g + 18 kg 575 g = 100 kg 655 g

	kg	g
	49	250
	32	830
+	18	575
	100	655

Hence, the weight of these three students = 100 kg 655 g **Ans.**

Exercise 11 D

1. Volume of cuboid = Length × Breadth × Height

(a) Volume of cuboid = $2.1\text{ m} \times 1.5\text{ m} \times 1.9\text{ m} = 5.985\text{ m}^3$ **Ans.**

(b) Volume of cuboid = $16.8\text{ m} \times 15.2\text{ m} \times 13.6\text{ m} = 3472.896\text{ m}^3$ **Ans.**

(c) Volume of cuboid = $136\text{ cm} \times 119\text{ cm} \times 126\text{ cm}$
$= 2039184\text{ cm}^3$ **Ans.**

(d) Volume of cuboid = $255\text{ cm} \times (2.36 \times 100)\text{ cm} \times (2.05 \times 100)\text{ cm}$
$= 255\text{ cm} \times 236\text{ cm} \times 205\text{ cm} = 12336900\text{ cm}^3$ **Ans.**

(e) Volume of cuboid = $207.3\text{ cm} \times 89.6\text{ cm} \times 82.5\text{ cm}$
$= 1532361.6\text{ cm}^3$ **Ans.**

(f) Volume of cuboid = $412\text{ cm} \times 217\text{ cm} \times 318\text{ cm}$
$= 28430472\text{ cm}^3$ **Ans.**

2. Volume of cuboid = Length × Breadth × Height

(a) Volume of cuboid = $24\text{ cm} \times 18\text{ cm} \times 15\text{ cm} = 6480\text{ cm}^3$ **Ans.**

(b) Volume of cuboid = $110\text{ m} \times 18\text{ m} \times 14\text{ m} = 27720\text{ m}^3$ **Ans.**

(c) Volume of cuboid = $230\text{ cm} \times 190\text{ cm} \times 175\text{ cm} = 7647500\text{ cm}^3$ **Ans.**

(d) Volume of cuboid = $60\text{ cm} \times 35\text{ cm} \times 44\text{ cm} = 92400\text{ cm}^3$ **Ans.**

(e) Volume of cuboid = $138\text{ m} \times 124\text{ m} \times 116\text{ m} = 1984992\text{ m}^3$ **Ans.**

(f) Volume of cuboid = $22\ m \times 14\ m \times 10\ m = 3080\ m^3$ **Ans.**

3. Volume of Cube = Side × Side × Side

(a) Volume of cube = $13\ cm \times 13\ cm \times 13\ cm = 2197\ cm^3$ **Ans.**

(b) Volume of cube = $31\ cm \times 31\ cm \times 31\ cm = 29791\ cm^3$ **Ans.**

(c) Volume of cube = $25\ cm \times 25\ cm \times 25\ cm = 15625\ cm^3$ **Ans.**

(d) Volume of cube = $61\ cm \times 61\ cm \times 61\ cm = 226981\ cm^3$ **Ans.**

(e) Volume of cube = $120\ cm \times 120\ cm \times 120\ cm = 1728000\ cm^3$ **Ans.**

(f) Volume of cube = $130\ cm \times 130\ cm \times 130\ cm = 2197000\ cm^3$ **Ans.**

4. Volume of Cube = Side × Side × Side

(a) Volume of cube = $3.9\ m \times 3.9\ m \times 3.9\ m = 59.319\ m^3$ **Ans.**

(b) Volume of cube = $11.4\ m \times 11.4\ m \times 11.4\ m$
$= 1481.544\ m^3$ **Ans.**

(c) Volume oc cube = $43.2\ cm \times 43.2\ cm \times 43.2\ cm$
$= 80621.568\ cm^3$ **Ans.**

(d) Volume of cube = $27.7\ cm \times 27.7\ cm \times 27.7\ cm$
$= 21253.933\ cm^3$ **Ans.**

(e) Volume of cube = $86.4\ cm \times 86.4\ cm \times 86.4\ cm$
$= 644972.544\ cm^3$ **Ans.**

(f) Volume of cube = $44.8\ cm \times 44.8\ cm \times 44.8\ cm$
$= 89915.392\ cm^3$ **Ans.**

5. Length of cuboid = 325 cm
Breadth of cuboid = $2.6\ m = 2.6 \times 100\ cm = 260\ cm$
and height of cuboid = 240 cm
∴ Volume of Cuboid = Length × Breadth × Height
$= 325\ cm \times 260\ cm \times 240\ cm = 20280000\ cm^3$ **Ans.**

6. Side of cube = $1.7\ m = 1.7 \times 100\ cm = 170\ cm$
∴ Volume of cube = side × side × side
$= 170\ cm \times 170\ cm \times 170\ cm = 4913000\ cm^3$

Hence, the volume of cube = $4913000\ cm^3$ **Ans.**

7. Length of cuboid = $2.6\ m = 2.6 \times 100\ cm = 260\ cm$
Breadth of cuboid = 210 cm
And height of cuboid = 190 cm
∴ Volume of cuboid = Length × Breadth × Height
$= 260\ cm \times 210\ cm \times 190\ cm = 10374000\ cm^3$

Hence, the volume of cuboid = $10374000\ cm^3$ **Ans.**

Exercise 11 E

1. (a) $73.4\ m^3 = 73.4 \times 1000000\ cm^3 = 73400000\ cm^3$ **Ans.**

(b) $80.32\ m^3 = 80.32 \times 1000000\ cm^3 = 80320000\ cm^3$ **Ans.**

(c) $616\ m^3 = 616 \times 1000000\ cm^3 = 616000000\ cm^3$ **Ans.**

(d) $752\ m^3 = 752 \times 1000000\ cm^3 = 752000000\ cm^3$ **Ans.**

(e) $65.046\ m^3 = 65.046 \times 1000000\ cm^3 = 65046000\ cm^3$ **Ans.**

(f) $77.085\ m^3 = 77.085 \times 1000000\ cm^3 = 77085000\ cm^3$ **Ans.**

2. (a) $51.9\ cm^3 = \frac{51.9}{1000000}\ m^3 = 0.0000519\ m^3$ **Ans.**

(b) $105.76\ cm^3 = \frac{105.76}{1000000}\ m^3 = 0.00010576\ m^3$ **Ans.**

(c) $356.935\ cm^3 = \frac{356.935}{1000000}\ m^3 = 0.000356935\ m^3$ **Ans.**

(d) $432\ cm^3 = \frac{432}{1000000}\ m^3 = 0.000432\ m^3$ **Ans.**

(e) $83.47\ cm^3 = \frac{83.47}{1000000}\ m^3 = 0.00008347\ m^3$ **Ans.**

(f) $637384\ cm^3 = \frac{637384}{1000000}\ m^3 = 0.637834\ m^3$ **Ans.**

Math Lab Activity

1. (i) $3.6\ kg = 3.6 \times 1000\ g = 3600\ g$

(ii) $\frac{4}{5}\ kg = \frac{4}{5} \times 1000\ g = 800\ g$ (iii) $1085\ g = 1\ kg\ 85\ g$

(iv) $46\ cm = 0.46\ m$ (v) $26.3\ m = 26.3 \times 100\ cm = 2630\ cm$

(vi) $9.25\ km = 9250\ m$

(vii) $475\ m = \frac{475}{1000}\ km = 0.475\ km$

(viii) $60506\ g = 60\ kg\ 506\ g$

(ix) $\frac{3}{10}\ km = \frac{3}{10} \times 1000\ m = 300\ m$

(x) $\frac{6}{10}\ m = \frac{6}{10} \times 100\ cm = 60\ cm$

(xi) If side of cube measured in m, then unit of volume of cube is m^3

(xii) If side of cuboid measured in cm, then unit of volume of cuboid is cm^3.

(xiii) The volume of a cuboid = length × breadth × height

(xiv) The volume of a cube = side × side × side

(xv) If edge of a cube is 10 cm, then volume of cube is 1000 cm^3.

(xvi) If length, breadth and height of a cuboid are 8 m, 5 m and 4 m respectively, then the volume of cuboid = 8 m × 5 m × 4 m = 160 m^3.

12. Geometry

Exercise 12 A

1. (a), (c) and (d) are polygons.

2. (a) triangle (b) hexagon (c) quadrilateral (d) pentagon

3. (a) triangle (b) circle (c) triangle (d) circle

Exercise 12 B

1. (a) ∠AOC : acute angle (b) ∠ABC : right angle
(c) ∠XYZ : obtuse angle (d) ∠PQR : obtuse angle
(e) ∠STU : obtuse angle (f) ∠PST : acute angle
(g) ∠KLM : acute angle (h) ∠LMN : acute angle
(i) ∠EFG : obtuse angle

Exercise 12 C

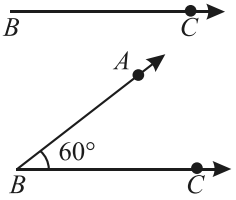
1. (a) obtuse angle (b) acute angle (c) acute angle (d) obtuse angle

2. (a) acute (b) right (c) obtuse (d) obtuse (e) acute (f) acute (g) acute (h) obtuse (i) acute (j) obtuse (k) acute (l) obtuse (m) acute (n) obtuse (o) obtuse

Exercise 12 D

1. (a) 90° (b) obtuse angle (c) B (d) ∠YXZ (e) 50°

2. (i) First of all, draw a ray BC.



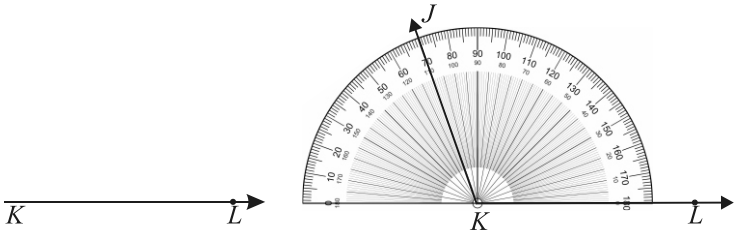
(ii) Adjust the protractor so that the center of the protractor falls on the unitial point *B* and the ray *BC* cross at 0 (zero) mark of the protractor.

(iii) Now start counting from this 0 and put a point *A* with the pencil on the cut of the protractor, marked 60°, as shown in the above figure.

(iv) Now remove the protractor and draw a ray BA by joining the point *B* to *A*. The measuare of *ABC* is 60°.

Thus, ∠ABC is so draw that its measure is 60°.

3. To draw ∠*JKL* of measure 110°.



(i) Draw a *KL* in your notebook.

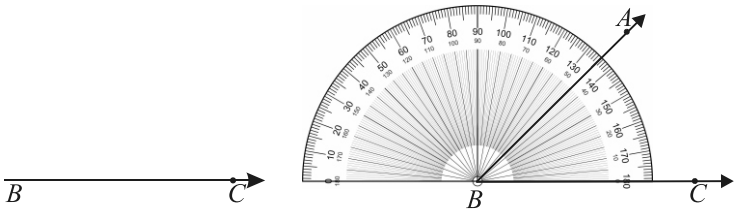
(ii) Adjust the protractor so that the centre of the protractor falls on the initial point *K* and ray *KL* crosses at 0 (zero) mark of the protractor as shown in the above figure.

(iii) Now start counting from this 0 (zero) and put a point *J* with pencil on the cut of the protractor marked 110° as shown in the above figure.

(iv) Now remove the protractor and draw ray JK by joining the point *K* to *M*.

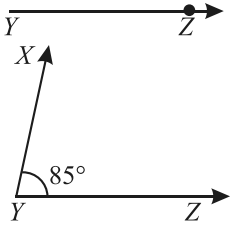
Thus, ∠*JKL* is drawn and its measure is 110°.

4. (a) To draw ∠*ABC* of measure 45°.

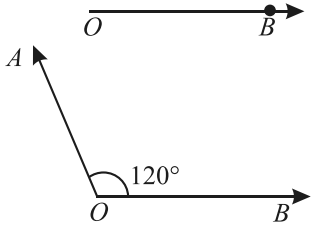


(i) First of all, draw in your notebook a ray *BC*.

(ii) Adjust the protractor so that the centre of the protractor falls on the initial point *B* and the ray *BC* crosses at 0 (zero) mark of the protractor.
(iii) Now start counting from this 0 (zero) and put a point *A* with pencil, on the cut of the protractor, marked 45, as shown in the above figure.
(iv) Now remove the protractor and draw ray *BA* by joining the point *B* to *A*. The measure of $\angle ABC$ is 45°.
Thus, $\angle ABC$ is so drawn that its measure is 45°.
(b) (i) First we draw a ray *YZ*.



(ii) Adjust the protractor so that the centre of the protractor falls on the initial point *Y* and the ray *YZ* crosses of 0 (zero) mark of the protractor.
(iii) Now start counting from this 0 and put a point *X* with the pencil on the cut of the protractor, marked 85° as shown in the figure.
(iv) Now remove the protractor and draw a ray *XY* by joining the point *X* to *Y*. The measure of *XYZ* is 85°.
Thus, $\angle XYZ$ is so drawn that its measure is 85°.
(c) (i) First we draw a ray *OB*.



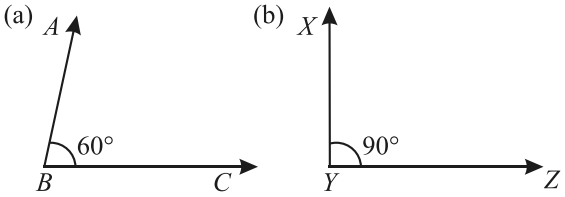
(ii) Adjust the protractor so that the centre of the protractor falls on the initial point *O* and the ray *OB* crosses at 0 (zero) mark of the protractor.

(iii) Now start counting from this O and put a point A with the pencil on the cut of the protractor, marked 120°, as shown in the above figure.
(iv) Now remove the protractor and draw a ray BA by joining the point B to A. The measure of ABC is 120°.
Thus, $\angle ABC$ is so drawn that its measure is 120°.
(d) Do your self.

5. (a) acute angle (b) acute angle (c) acute angle
(d) acute angle (e) right angle (f) obtuse angle
(g) obtuse angle (h) acute angle (i) obtuse angle

6. (a) acute angle (b) obtuse angle

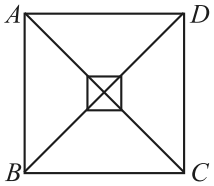
7.



Exercise 12 E

1. Three **2.** Four **3.** Four **4.** Two **5.** One

6.



Hence, four right angles are formed where the diagonals cross.

Ans.

Skill Test-3

A. 1. (a) ₹ 47.50 2. (b) ₹ 15.20 3. (c) ₹ 532.75
4. (c) ₹ 89.05 5. (a) ₹ 888.75 6. (b) ₹ 80
7. (c) ₹ 60 8. (c) ₹ 1270 9. (b) 0.45
10. (c) 604% 11. (d) ₹ 120

13. Area and Perimeter

Exercise 13 A

1. (a) length = 40 cm and breadth = 10 cm

$\therefore$ Area = length × breadth = $40 \times 10\ \text{cm}^2 = 400\ \text{cm}^2$

(b) length = 50 cm and breadth = 7 cm

$\therefore$ Area = $50\ \text{cm} \times 7\ \text{cm} = 350\ \text{cm}^2$

(c) length = 60 cm and breadth = 50 cm

$\therefore$ Area = $60\ \text{cm} \times 50\ \text{cm} = 3000\ \text{cm}^2$

2. (a) Area of square = side × side = $4\ \text{cm} \times 4\ \text{cm} = 16\ \text{cm}^2$ **Ans.**

(b) Area of square = side × side = $10\ \text{cm} \times 10\ \text{cm} = 100\ \text{cm}^2$ **Ans.**

(c) Area of square = side × side = $35\ \text{cm} \times 35\ \text{cm} = 1225\ \text{cm}^2$ **Ans.**

(d) Area of square = side × side = $15\ \text{cm} \times 15\ \text{cm} = 225\ \text{cm}^2$ **Ans.**

(e) Area of square = side × side = $16\ \text{cm} \times 16\ \text{cm} = 256\ \text{cm}^2$ **Ans.**

(f) Area of square = side × side = $7\ \text{cm} \times 7\ \text{cm} = 49\ \text{cm}^2$ **Ans.**

(g) Area of square = side × side = $8\ \text{cm} \times 8\ \text{cm} = 64\ \text{cm}^2$ **Ans.**

(h) Area of square = side × side = $25\ \text{cm} \times 25\ \text{cm} = 625\ \text{cm}^2$ **Ans.**

(i) Area of square = side × side = $17\ \text{cm} \times 17\ \text{cm} = 289\ \text{cm}^2$ **Ans.**

(j) Area of square = side × side = $50\ \text{cm} \times 50\ \text{cm} = 2500\ \text{cm}^2$ **Ans.**

(k) Area of square = side × side = $70\ \text{cm} \times 70\ \text{cm} = 4900\ \text{cm}^2$ **Ans.**

(l) Area of square = side × side = $10\ \text{cm} \times 10\ \text{cm} = 100\ \text{cm}^2$ **Ans.**

3. (a) Length = 15 cm and area = 150 sq cm

$$\therefore \text{Breadth} = \frac{\text{Area}}{\text{Length}} = \frac{150}{15}\ \text{cm} = 10\ \text{cm}$$

(b) Breadth = 9 cm and area = 135 sq cm

$$\therefore \text{Length} = \frac{\text{Area}}{\text{Breadth}} = \frac{135}{9}\ \text{cm} = 15\ \text{cm}$$

(c) Length = 27 cm and breadth = 25 cm

$\therefore$ Area = length × breadth = $27\ \text{cm} \times 25\ \text{cm} = 675\ \text{cm}^2$

(d) Length = 11 m and area = 121 sq m

$$\therefore \text{Breadth} = \frac{\text{Area}}{\text{Length}} = \frac{121}{11}\ \text{m} = 11\ \text{m}$$

4. Length of floor $= 3.2$ m
and breadth of floor $= 2.0$ m
$\therefore$ Area of floor $=$ Length $\times$ Breadth $= 3.2\text{ m} \times 2.0\text{ m} = 6.4\text{ m}^2$
Hence, the area of floor $= 6.4\text{ m}^2$ **Ans.**

5. Length of lawn $= 58$ m
And breadth of lawn $= 47$ m
$\therefore$ Area of lawn $=$ length $\times$ breadth $= 58\text{ m} \times 47\text{ m} = 2726\text{ m}^2$
Hence, the area of lawn $= 2726\text{ m}^2$ **Ans.**

6. Length of a carpet $= 5$ m
Breadth of a carpet $= 3$ m
$\therefore$ Area of a carpet $= 5\text{ m} \times 3\text{ m} = 15\text{ m}^2$
$\therefore$ Area of 20 carpets $= 15 \times 20\text{ m}^2 = 300\text{ m}^2$
Hence, the area of the floor of the auditorium $= 300$ **Ans.**

7. Side of square $= 220$ cm
$\therefore$ Area of square table $=$ side $\times$ side $= 220\text{ cm} \times 220\text{ cm}$
$= 48400\text{ cm}^2$
Hence, the area of square $= 48400\text{ cm}^2$ **Ans.**

8. Length of badminton court $= 35$ m
And breadth of badminton court $= 22$ m
$\therefore$ Area of badminton court $= 35\text{ m} \times 22\text{ m} = 770\text{ m}^2$
Hence, the area of badminton court $= 770\text{ m}^2$ **Ans.**

9. (a) Area of shaded part
$= (1+1+1+1+1+1+1+1+1+1+1+1+1+1+1)\text{ cm}^2 = 15\text{ cm}^2$ **Ans.**
(b) Area of shaded part
$= \left(1+1+1+1+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}\right)\text{cm}^2 = \left(4+\frac{8}{2}\right)\text{cm}^2$
$= 8\text{ cm}^2$ **Ans.**
(c) Area of shaded part $= \left(1+1+1+1+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}\right)\text{cm}^2$
$= \left(4+\frac{4}{2}\right)\text{cm}^2 = 6\text{ cm}^2$
Ans.

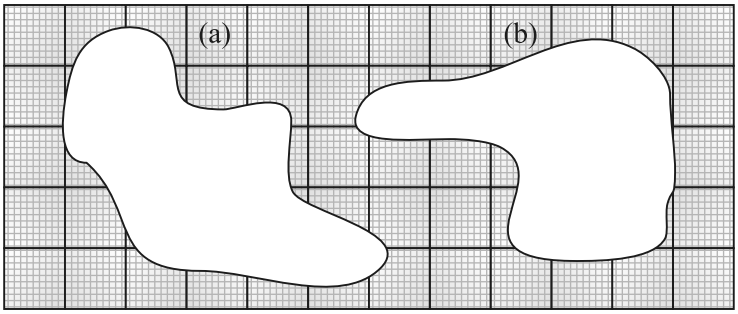
(d) Area of shaded part

$$= \left(1+1+1+1+1+1+1+1+1+1+1+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}+\frac{1}{2}\right) \text{cm}^2$$

$$= \left(11+\frac{4}{2}\right) \text{cm}^2 = 13 \text{ cm}^2$$

Ans.

Exercise 13 B



(a) Approximatly Area of above = 11 sq cm

(b) Approximatly Area of above = 11 sq cm

Exercise 13 C

1. (a) Perimeter of square = 4 × side = 4 × 10 cm = 40 cm

(b) Perimeter of square = 4 × side = 4 × 75 cm = 300 cm

(c) Perimeter of square = 4 × side = 4 × 22 cm = 88 cm

(d) Perimeter of square = 4 × side = 4 × 20 cm = 80 cm

(e) Perimeter of square = 4 × side = 4 × 15 cm = 60 cm

(f) Perimeter of square = 4 × side = 4 × 100 cm = 400 cm

(g) Perimeter of square = 4 × side = 4 × 125 cm = 500 cm

(h) Perimeter of square = 4 × side = 4 × 25 cm = 100 cm

(i) Perimeter of square = 4 × side = 4 × 10 cm = 40 cm

(j) Perimeter of square = 4 × side = 4 × 225 cm = 900 cm

2. (a) Length = 25 cm and breadth = 18 cm

$\therefore$ Perimeter of rectangles = 2 (Length + Breadth)

= 2(25 + 18) cm = 2 × 43 cm = 86 cm

(b) Length = 37 cm and breadth = 26 cm

$\therefore$ Perimeter = 2(37 + 26) cm = 2 × 63 cm = 126 cm

(c) Length = 50 cm and breadth = 40 cm

$\therefore$ Perimeter = 2(50 + 40) cm = 2 × 90 cm = 180 cm

(d) Length = 35 cm and breadth = 22 cm

$\therefore$ Perimeter = Length $\times$ Breadth $= 2(35 + 22)$ cm
$= 2 \times 57$ cm $= 114$ cm

3. (a) Perimeter $= 1\text{ m} + 2\text{ m} + 3\text{ m} + 15\text{ m} + 8\text{ m} + 20\text{ m} + 12\text{ m} + 10\text{ m}$
$= 71$ m **Ans.**

(b) Perimeter of shaded part
$= 4 \times (1+1+1+1+1+1+1+1+1+1+1+1+1+1+1+1+1+1+1+1)$ cm
$= 4 \times 18$ cm $= 72$ cm **Ans.**

4. Side of square field $= 47$ m
$\therefore$ perimeter of square field $= 4 \times$ side $= 4 \times 47$ m $= 188$ m
Hence, 188 m he walked. **Ans.**

5. Length of rectangular field $= 75$ m
and breadth of rectangular field $= 60$ m
$\therefore$ Perimeter of rectangular field $= 2$ (length + breadth)
$= 2(75\text{ m} + 60\text{ m}) = 2 \times 135\text{ m} = 270\text{ m}$
Now, the cost of fencing the field = ₹ 26.75×270 = ₹ 7222.50
Hence, the cost of fencing the rectangular field is ₹ 7222.50.
Ans.

6. Side of square garden $= 35$ m
$\therefore$ Perimeter of garden $= 4 \times 35$ m $= 140$ m
Now, the cost of fencing the garden = ₹ 140×24 = ₹ 3360
Hence, the cost of fencing the garden = ₹ 3360. **Ans.**

14. Volume

Exercise 14

1. (a) A cuboidal box contains 35 cubes of 1 cm in it. Its volume is 35 cm^3

(b) The volume of a cuboid = length $\times$ breadth $\times$ height

(c) The volume of a 6 m cube $= 6^3\ \text{m}^3 = 216\ \text{m}^3$

(d) The volume of a cube and a cuboid is always mentioned in cubic unit

2. (a) Volume of cuboid $= l \times b \times h$
$= 25\text{ cm} \times 22\text{ cm} \times 18\text{ cm} = 9900\ \text{cm}^3$ **Ans.**

(b) Volume of cuboid $= l \times b \times h$
$= 24\text{ cm} \times 19\text{ cm} \times 17\text{ cm} = 7752\ \text{cm}^3$ **Ans.**

(c) Volume of cuboid $= l \times b \times h$
$= 6.5\text{ cm} \times 5.5\text{ cm} \times 3.5\text{ cm} = 125.125\text{ cm}^3$ **Ans.**

(d) Volume of cuboid $= l \times b \times h$
$= 6.3\text{ cm} \times 4.5\text{ cm} \times 2.8\text{ cm} = 79.38\text{ cm}^3$ **Ans.**

(e) Volume of cuboid $= l \times b \times h$
$= 22.5\text{ cm} \times 17.8\text{ cm} \times 14\text{ cm} = 5607\text{ cm}^3$ **Ans.**

3. (a) Volume of the cube $= 24\text{ cm} \times 24\text{ cm} \times 24\text{ cm}$
$= 13824\text{ cm}^3$ **Ans.**

(b) Volume of the cube $= 20.5\text{ cm} \times 20.5\text{ cm} \times 20.5\text{ cm}$
$= 8615.125\text{ cm}^3$ **Ans.**

(c) Volume of the cube $= 3.2\text{ m} \times 3.2\text{ m} \times 3.2\text{ m}$
$= 32.768\text{ m}^3$ **Ans.**

(d) Volume of the cube $= 5.5\text{ cm} \times 5.5\text{ cm} \times 5.5\text{ cm}$
$= 166.375\text{ cm}^3$ **Ans.**

4. (a) Edge of the cube $= 1\text{ cm}$
$\therefore$ Volume of one cube $= 1\text{ cm} \times 1\text{ cm} \times 1\text{ cm} = 1\text{ cm}^3$
$\therefore$ Volume of 12 cubes $= 12 \times 1\text{ cm}^3 = 12\text{ cm}^3$ **Ans.**

(b) Edge of the cube $= 1\text{ cm}$
Volume of the one cube $= 1^3\text{ cm}^3 = 1\text{ cm}^3$
$\therefore$ Volume of 14 cubes $= 14 \times 1\text{ cm}^3 = 14\text{ cm}^3$ **Ans.**

(c) Volume of one cube $= 1^3\text{ cm}^3 = 1\text{ cm}^3$
$\therefore$ Volume of 25 cubes $= 25 \times 1\text{ cm}^3 = 25\text{ cm}^3$ **Ans.**

5. (a) Height of the cuboid $= \dfrac{\text{Volume of the cuboid}}{\text{length} \times \text{breadth}}$
$= \dfrac{18\text{cm}^3}{3\text{cm} \times 2\text{cm}} = \dfrac{18}{6}\text{ cm} = 3\text{ cm}$ **Ans.**

(b) Width of the cuboid $= \dfrac{\text{Volume of the cuboid}}{\text{length} \times \text{height}}$
$= \dfrac{15\text{cm}^3}{5\text{cm} \times 3\text{cm}} = \dfrac{15}{15}\text{ cm} = 1\text{ cm}$ **Ans.**

(c) Length of the cuboid $= \dfrac{\text{Volume of the cuboid}}{\text{width} \times \text{height}}$
$= \dfrac{64\text{ cm}^3}{4\text{cm} \times 4\text{cm}} = \dfrac{64}{16}\text{ cm} = 4\text{ cm}$ **Ans.**

(d) Breadth of the cuboid $= \dfrac{\text{Volume of the cuboid}}{\text{length} \times \text{height}}$

$$= \frac{27\ \text{cm}^3}{3\,\text{cm} \times 3\,\text{cm}} = \frac{27}{9}\,\text{cm} = 3\,\text{cm}$$

Ans.

6. Length of brick $= 25$ cm
Breadth of brick $= 8$ cm
and height of brick $= 5$ cm
$\therefore$ Volume of brick $= l \times b \times h$
$= 25\,\text{cm} \times 8\,\text{cm} \times 5\,\text{cm} = 25\,\text{cm} \times 40\,\text{cm}^2 = 1000\,\text{cm}^3$
Now, Length of hall $= 20$ m
Breadth of hall $= 4$ m
and height of hall $= 6$ m
$\therefore$ Volume of hall $= l \times b \times h = 20\,\text{m} \times 4\,\text{m} \times 6\,\text{m} = 480\,\text{m}^3$

$\therefore$ Number of bricks $= \dfrac{\text{Volume of hall}}{\text{Volume of brick}}$

$$= \frac{480\ \text{m}^3}{1000\ \text{cm}^3} = \frac{480 \times 1000000\ \text{cm}^3}{1000\ \text{cm}^3} = 480000$$

Hence, the number of bricks $= 480000$ **Ans.**

7. Length of pit $= 9.5$ m
Breadth of pit $= 3.5$ m
and height of pit $= 2.5$ m
$\therefore$ Volume of pit $= l \times b \times h = 95\,\text{m} \times 35\,\text{m} \times 25\,\text{m} = 83125\,\text{m}^3$
Hence, the volume of the earth dug out from a cubical pit
$= 83.125\,\text{m}^3$ **Ans.**

15. Time

Exercise 15 A

1. (a) 6 : 10 pm (b) 4 : 45 pm (c) 1 : 40 pm
(d) 9 : 30 pm (e) 3 : 30 pm (f) 5 : 15 pm

2. (a) 22 : 50 hrs (b) 14 : 40 hrs (c) 16 : 20 hrs
(d) 21 : 00 hrs (e) 23 : 10 hrs (f) 16 : 45 hrs

3. Take time of leave aeroplane $= 12 : 50$ hours
Take time of reach of aeroplane $= 13 : 40$ hours
$\therefore$ Take duration of journey $= 13 : 40$ hours $- 12 : 50$ hours
$= \{(13 \times 60) + 40\ \text{minute}\} - \{(12 \times 60)\ \text{minute} + 50\ \text{minute}\}$
$= (780\ \text{minute} + 40\ \text{minute}) - (720\ \text{minute} + 50\ \text{minute})$
$= 820\ \text{minute} - 770\ \text{minute} = 50\ \text{minutes}.$ **Ans.**

4. Duration of the journey $= 17 : 30$ hours $- 14 : 20$ hours

$= \{(17 \times 60)$ minute $+ 30$ minute$\} - \{(14 \times 60)$ minute $+ 20$ minute$\}$

$= 1050$ minute $- 860$ minute $= 190$ minute

$= 3$ hours 10 minutes. **Ans.**

5. Total number of days in first six months $= 31$ days $+ 28$ days $+ 31$ days $+ 30$ days $+ 31$ days $+ 30$ days $= 181$ days

6. Tourist bus leaves Dehradoon 21 : 30 hours and reaches Delhi $= 9 : 30$ hours

Now, duration of the journey $= 9 : 30$ hours $- 3 : 30$ hours

$= 6 : 00$ hours. **Ans.**

7. Total number of days in last six months $= 31$ days $+ 31$ days $+ 30$ days $+ 31$ days $+ 30$ days $+ 31$ days $= 184$ days.

Exercise 15 B

1. (a) Number of days from 2nd February 2015 to 5th May 2015
$= 27$ days $+ 30$ days $+ 31$ days $+ 5$ days $= 93$ days

(b) Number of days from 3rd March to 9th September $= 29$ days $+ 30$ days $+ 31$ days $+ 30$ days $+ 31$ days $+ 31$ days $+ 9$ days $= 191$ days

(c) Number of days from 14th July to 31st December $= 18$ days $+ 31$ days $+ 30$ days $+ 31$ days $+ 30$ days $+ 31$ days $= 171$ days

(d) Number of days from 2nd October to 14th November $= 30$ days $+ 14$ days $= 44$ days

2. Price of a daily newspaper $=$ ₹ 2.50

Number of days width out holiday $= (365 - 10)$ days $= 355$ days

$\therefore$ Total cost of news paper an ordinary year

$=$ ₹ $2.50 \times 355 =$ ₹ 887.50 **Ans.**

3. (a) 8 weeks 2 days $= (8 \times 7 + 2)$ days $= (56 + 2)$ days $= 58$ days **Ans.**

(b) 8 weeks 3 days $= (8 \times 7 + 3)$ days $= (56 + 3)$ days $= 59$ days **Ans.**

(c) 9 weeks 6 days $= (9 \times 7 + 6)$ days $= (63 + 6)$ days $= 69$ days **Ans.**

(d) 5 weeks 2 days $= (5 \times 7 + 2)$ days $= (35 + 2)$ days $= 37$ days **Ans.**

(e) 4 weeks 1 day $= (4 \times 7 + 1)$ days $= (28 + 1)$ days $= 29$ days **Ans.**

(f) 4 weeks 5 days $= (4 \times 7 + 5)$ days $= (28 + 5)$ days $= 33$ days **Ans.**

4. (a) 6 weeks 3 days 16 hours $= (6 \times 7 \times 24)$ hours $+ (3 \times 24)$ hours $+ 16$ hours

$= 1008$ hours $+ 72$ hours $+ 16$ hours $= 1096$ hours **Ans.**

(b) 14 weeks 16 days 25 hours $= (14 \times 7 \times 24)$ hours $+ (16 \times 24)$ hours $+ 25$ hours
$= 2352$ hours $+ 384$ hours $+ 25$ hours $= 2761$ hours **Ans.**

(c) 3 weeks 4 days 25 hours $= (3 \times 7 \times 24)$ hours $+ (4 \times 24)$ hours $+ 25$ hours
$= 504$ hours $+ 96$ hours $+ 25$ hours $= 625$ hours **Ans.**

(d) 20 weeks 12 days 15 hours $= (20 \times 7 \times 24)$ hours $+ (12 \times 24)$ hours $+ 15$ hours
$= 3360$ hours $+ 288$ hours $+ 15$ hours $= 3663$ hours **Ans.**

(e) 13 weeks 6 days 24 hours $= (13 \times 7 \times 24)$ hours $+ (6 \times 24)$ hours $+ 24$ hours
$= 2184$ hours $+ 144$ hours $+ 24$ hours $= 2352$ hours **Ans.**

(f) 13 weeks 3 days 44 hours $= (13 \times 7 \times 24)$ hours $+ (3 \times 24)$ hours $+ 44$ hours
$= 2184$ hours $+ 72$ hours $+ 44$ hours $= 2300$ hours **Ans.**

5. (a) 8 hrs 25 minutes $= (8 \times 60)$ min $+ 25$ min $= 480$ min $+ 25$ min
$= 505$ min **Ans.**

(b) 11 hrs 450 min $= (11 \times 60)$ min $+ 45$ min $= 660$ min $+ 45$ min
$= 705$ min **Ans.**

(c) 9 hrs 20 min $= (9 \times 60)$ min $+ 20$ min $= 540$ min $+ 20$ min
$= 560$ min **Ans.**

(d) 12 hrs 45 min $= (12 \times 60)$ min $+ 45$ min $= 720$ min $+ 45$ min
$= 765$ min **Ans.**

(e) 10 hrs 35 min $= (10 \times 60)$ min $+ 35$ min $= 600$ min $+ 35$ min
$= 635$ min **Ans.**

(f) 13 hrs 40 min $= (13 \times 60)$ min $+ 40$ min $= 780$ min $+ 40$ min
$= 820$ min **Ans.**

6. (a) 6 hrs 25 min 15 sec $= (6 \times 60 \times 60)$ sec $+ (25 \times 60)$ sec $+ 15$ sec
$= 21600$ sec $+ 1500$ sec $+ 15$ sec $= 23115$ sec **Ans.**

(b) 7 hrs 25 min 17 sec $= (7 \times 60 \times 60)$ sec $+ (25 \times 60)$ sec $+ 17$ sec
$= 25200$ sec $+ 1500$ sec $+ 17$ sec $= 26717$ sec **Ans.**

(c) 7 hrs 35 min 50 sec $= (7 \times 60 \times 60)$ sc $+ (35 \times 60)$ sec $= 50$ sec
$= 25200$ sec $+ 2100$ sec $+ 50$ sec $= 27350$ sec **Ans.**

(d) 9 hrs 25 min 17 sec $= (9 \times 60 \times 60)$ sec $+ (25 \times 60)$ sec $+ 17$ sec
$= 32400$ sec $+ 1500$ sec $+ 17$ sec $= 33917$ sec **Ans.**

(e) 9 hrs 40 min 25 sec $= (9 \times 60 \times 60)$ sec $+ (40 \times 60)$ sec $+ 45$ sec
$= 32400$ sec $+ 2400$ sec $+ 25$ sec $= 34825$ sec **Ans.**

(f) 3 hrs 20 min 45 sec $= (3 \times 60 \times 60)$ sec $+ (20 \times 60)$ sec $+ 45$ sec
$= 10800$ sec $+ 1200$ sec $+ 45$ sec $= 12045$ sec **Ans.**

Exercise 15 C

1. (a)

weeks	days	hours
14	13	17
25	16	19
37	15	22
+43	14	30
127	5	16

(b)

weeks	days	hours
29	12	23
34	11	20
45	16	26
+18	23	21
139	2	18

(c)

hrs	min	sec
29	30	50
17	27	36
22	15	27
+13	45	14
83	59	7

(d)

hrs	min	sec
11	56	18
24	27	32
16	48	19
+35	12	30
88	24	39

2. (a)

weeks	days	hours
17	23	15
−12	15	19
5	07	20

(b)

weeks	days	hours
38	14	22
−23	16	18
14	5	04

Exercise 15 D

1. (a)

weeks	days
1	3
×	8
11	3

Steps : (i) Multiply hours :
3 days $\times 8 = 24$ days
24 days $= 3$ weeks 3 days
write below 3 in days column.

(ii) Multiply weeks :
8×1 week $= 8$ weeks
8 weeks + 3 weeks (leftover from days) $= 11$ weeks
write 11 in weeks column.
Hence, the answer is 11 weeks 3 days.

(b)

hrs	min
2	5 5
×	3
8	4 5

Steps : (i) Multiply min : $55 \text{ min} \times 3 = 165 \text{ min}$

$165 \text{ min} = 2 \text{ hrs } 45 \text{ min}$

write below 45 in min column.

(ii) Multiply hrs : $2 \text{ hrs} \times 3 = 6 \text{ hrs}$

$6 \text{ hrs} + 2 \text{ hrs (leftover from min)} = 8 \text{ hrs}$

Hence, the answer is 8 hrs 45 min

(c)

hrs	min	sec
4	2 1	3 3
	×	7
3 0	3 0	5 1

Steps : (i) Multiply sec : $7 \times 33 \text{ sec} = 231 \text{ sec}$

$231 \text{ sec} = 3 \text{ min } 51 \text{ sec}$

write 51 below sec column.

(ii) Multiply min : $7 \times 21 \text{ min} = 147 \text{ min}$

$147 \text{ min} + 3 \text{ min (leftover from sec)} = 150 \text{ min}$

$150 \text{ min} = 2 \text{ hrs } 30 \text{ min}$

write 30 below min column.

(iii) Multiply hrs :

$7 \times 4 \text{ hrs} = 28 \text{ hrs}$

$28 \text{ hrs} + 2 \text{ hrs (leftover from min)} = 30 \text{ hrs}$

Hence, answer is 30 hrs 30 min 51 sec.

2. Take time to knit a sweater $= 5 \text{ hrs } 20 \text{ min}$

$\therefore$ Take time to knit 10 sweaters $= 5 \text{ hrs } 20 \text{ min} \times 10$

$\{(5 \times 60) \text{ min} + 20 \text{ min}\} \times 10$

$= (300 \text{ min} + 20 \text{ min}) \times 10 = 3200 \text{ min} = \dfrac{3180}{60} \text{ hrs} + 20 \text{ min} = 53$ hrs 20 min **Ans.**

3. Total Time $= 12 : 00 \text{ am} - 10 : 45 \text{ pm} + 5 : 20 \text{ am}$

$= 1 : 15 + 5 : 20 = 6 : 35$

Hence, 6 hours 35 min Amit sleep everyday. **Ans.**

4. Take time to make all chairs $= 20 \times 45 \text{ min} = 900 \text{ min} = \frac{900}{60} \text{ hrs}$

$= 15$ hours

Hence, 15 hours he take to make all the chairs. **Ans.**

5. The farmer earned money = $\{(6 \times 7) \text{ days} + 3 \text{ days}\} \times ₹\ 300$

$= 45 \times ₹\ 300 = ₹\ 13500$

Hence, ₹ 13500 the farmer could earn. **Ans.**

16. Data Handling

Exercise 16

1. (a) School bus is used by most of the students.
(b) Car is used by least number of students.
(c) $40 + 35 = 75$ students used cycle and scooter.
(d) 50 students go on foot.
(e) Total strength of school $= 40 + 70 + 30 + 50 + 35 = 225$ students

2. (a) The maximum number of students were present on Thursday
(b) The minimum number of students were present on Sunday
(c) The strength of class on Tuesday are 30 students
(d) Monday and Friday strength are same.
(e) 60 students

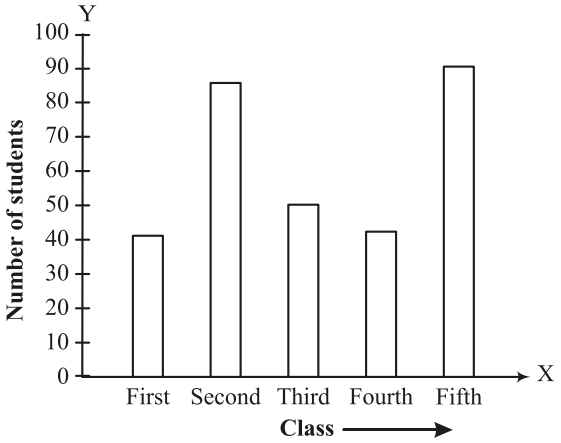
3. (a) In II match the player scored maximum runs.
(b) In III match the player scored minimum runs.
(c) 40 runs were scored in first match.
(d) 30 runs were scored in fifth match.
(e) Total number of run scored in five matches
$= 40 + 70 + 30 + 50 + 40 = 230$

4. (a) On foot maximum money spent.
(b) The money spent on rent and miscellaneous
$= ₹\ 30000 + ₹\ 30000 = ₹\ 60000$
(c) ₹ 50000 spent on education.
(d) ₹ 40000 spent on clothing.
(e) Total expenditure of month
$= ₹\ 30000 + ₹\ 60000 + ₹\ 50000 + ₹\ 40000 + ₹\ 30000 = ₹\ 210000$

5. (a) Krishan got the maximum marks in Science.
(b) Krishan got the minimum marks in Hindi.
(c) 100 marks obtained by his in Hindi.
(d) English and Art he got equal marks.
(e) Marks obtained by Krishan in English, Maths, Science, Hindi and Art respectively are 120, 160, 180, 100 and 120.

Math Lab Activity

Sol. The bar graph of given Information as follows :



17. Symmetry

Exercise 17

1. Yes, two halves are symmetrical.

2. (a) Order of rational symmetry is 4.
(b) Order of rational symmetry is 2.
(c) Order of rational symmetry is 2.
(d) Order of rational symmetry is 0.
(e) Order of rational symmetry is 3.
(f) Order of rational symmetry is 6.
(g) Order of rational symmetry is 4.
(h) Order of rational symmetry is 4.
(i) Order of rational symmetry is 4.

3. (a) $\rightarrow$ (ii), (b) $\rightarrow$ (iv), (c) $\rightarrow$ (i), (d) $\rightarrow$ (iii).

18. Patterns

Exercise 18 A

1. (a) $2+7=9, 2\times 7=14$ (b) $9+4=13, 9-4=5$
(c) $7+5=12, 7\times 5=35$ (d) $7-1=6, 7+1=8$
(e) $8+4=12, 8-4=4$ (f) $9-6=3, 9\times 6=54$

2. (a) The missing numbers are 22, 29, 37, 46
(b) The missing numbers are 37, 50, 65, 82
(c) The missing numbers are 64, 128, 256, 512
(d) The missing numbers are 45, 125, 30, 100
(e) The missing numbers are 36, 16, 30, 12
(f) The missing numbers are 49, 64, 81, 100
(g) The missing numbers are 16, 36, 20, 45
(h) The missing numbers are 64, 32, 16, 8
(i) The missing numbers are 100, 81, 64, 49

Exercise 18B

1. (a) $\frac{1}{11}=0.0909090909$ (b) $\frac{2}{11}=0.1818181818$
(c) $\frac{3}{11}=0.2727272727$ (d) $\frac{4}{11}=0.3636363636$
(e) $\frac{5}{11}=0.4545454545$ (f) $\frac{6}{11}=0.5454545454$
(g) $\frac{7}{11}=0.6363636363$ (h) $\frac{8}{11}=0.7272727272$
(i) $\frac{9}{11}=0.8181818181$

2. (a) $1\div 9=0.111111$ (b) $2\div 9=0.222222$ (c) $3\div 9=0.333333$
(d) $4\div 9=0.444444$ (e) $5\div 9=0.555555$ (f) $6\div 9=0.666666$
(g) $7\div 9=0.777777$ (h) $8\div 9=0.888888$

3. $37\times 3=111, 37\times 33=1221, 37\times 333=12321, 37\times 3333=123321,$
$37\times 33333=1233321$

4. (a) $9\times 6=54, 9\times 66=594$
(b) $91\times 44=4004, 91\times 444=40404$
(c) $1\times 9=9, 12\times 9=108$
(d) $9\times 666=5994, 9\times 6666=59994$
(e) $91\times 4444=404404, 91\times 44444=4044404$
(f) $123\times 9=1107, 1234\times 9=11106$

5. (a) $143 \times 1 \times 7 = 1001, 143 \times 2 \times 7 = 2002, 143 \times 3 \times 7 = 3003,$
$143 \times 4 \times 7 = 4004, 143 \times 5 \times 7 = 5005, 143 \times 6 \times 7 = 6006,$
$143 \times 7 \times 7 = 7007, 143 \times 8 \times 7 = 8008, 143 \times 9 \times 7 = 9009$

6. $143 \times 100 \times 7 = 100100, 143 \times 101 \times 7 = 101101,$
$143 \times 102 \times 7 = 102102, 143 \times 103 \times 7 = 103103,$
$143 \times 104 \times 7 = 104104, 143 \times 105 \times 7 = 105105,$
$143 \times 106 \times 7 = 106106, 143 \times 107 \times 7 = 107107,$
$143 \times 108 \times 7 = 108108,$ and $143 \times 109 \times 7 = 109109$

Skill Test-4

A. 1. (b) 36 cm^2 2. (d) m^2 3. (b) 20 cm
4. (a) 6 cm^2 5. (b) 22 cm 6. (b) 120 sec
7. (b) 300 min 8. (a) 360 sec 9. (c) 530 sec
10. (d) 550 min