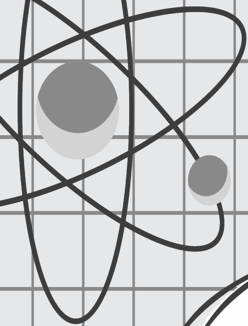
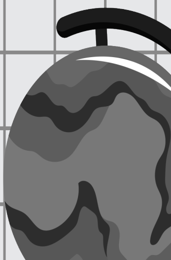


NUMBER LAND

(Teacher Manual)

Class-5



Number Land Class - 5

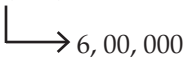
1.1

1. a. 10000000 b. 40,29,581 c. (i) 100 Thousands (ii) Fourth PV of 0 = 0

2. a. 5, 23, 640 b. 4,17,08,056 c. 94,60,022 d. 13,25,06,132
   e. 10,36,907 f. 98,10,08,500 g. 30,31,00,001 h. 6,08,39,570
3. a. 58,00,402 = Fifty eight lakh four hundred two.
   b. 4,17,00,856 = Four crore seventeen lakh eight hundred fifty six.
   c. 94,60,022 = Ninety four lakh sixty thousand twenty two.
   d. 13,25,06,132 = Thirteen crore twenty five lakh six thousand one hundred thirty two.
   e. 10,36,907 = Ten lakh thirty six thousand nine hundred seven.
   f. 98,10,08,500 =Ninety eight crore ten lakh, eight thousand five hundred.
   g. 30,31,00,001 = Thirty crore thirty one lakh and one.
   h. 6,08,39,570 = Six crore eight lakh thirty nine thousand five hundred seventy.
4. a. 92,83,174 b. 57,30,046 c. 76,81,209 d. 8,85,28,132
   e. 5,00,00,017 f. 2,02,02,202 g. 60,00,06,066
5. a. 74,10,507 = 70,00,000 + 4,00,000 + 10,000 + 500 + 0 + 7
   b. 97, 08 619 = 90,00,000 + 7,00,000 + 8000 + 600 + 10 + 9
   c. 99,99,99,999 = 90, 00, 00, 000 + 9, 00, 00, 000 + 90, 00, 000 + 9, 00, 000 + 90, 000 + 9,000 + 900 + 90 + 9
   d. 43,57,09,412 = 40,00,00,000 + 3,00,00,000 + 50,00,000 + 7,00,000 + 9,000 + 400 + 10 + 2
   e. 58,13,31,000 = 50,00,00,000 + 8,00,00,000 + 10,00,000 + 3,00,000 + 30,000 + 1000
   f. 39, 30, 21, 562 = 30, 00, 00, 000 + 9, 00, 00, 000 + 30, 00, 000 + 20, 000 + 1, 000 + 500 + 60 + 2
6.

	TC	C	TL	L	Tth	Th	H	T	O
a.	1	4,	0	1,	0	0,	0	0	2
b.		8,	0	8,	0	0,	0	0	8
c.	1	1,	0	0,	3	6,	0	1	6
d.		8,	5	7,	6	0,	0	6	3
e.	1	9,	0	3,	0	0,	7	0	1
f.	1	7,	3	2,	0	8,	0	0	8

7. a. 3 1, 7 6, 5 3, 0 1 0



b. 4 1, 0 8, 0 9, 0 0 4

c. 7, 0 1, 2 4, 4 5 6

d. 3 8, 9 2, 0 1, 5 6 9

e. 7 0, 0 7, 7 0, 0 0 0

f. 6 4, 5 3, 0 0, 8 4 2

8. a. 85, 37, 000 b. 9, 90, 08, 999 c. 1, 27, 00, 900 d. 99, 99, 999

1.2

1. a. < b. > c. > d. <
2. Descending order
   a. 627905623 > 627905480 > 62790931 > 62790568 > 62790548
   b. 63082318 > 50643701 > 30728510 >27169237 > 7987689
   c. 245370119 > 245368009 >93216723 > 53791325 > 45639918
3. Ascending order
   a. 89590788 < 304288713 < 561945107 < 602357100 < 743162109
   b. 2537928 < 14035710 < 20547946 < 100515602 < 101002301
   c. 7876589 < 38715206 < 697216562 < 73678314 < 129405817
4. a. 90000001 b. 307482134 c. 101010706 d. 102240003

1.3

	HM	TM	M	HTh	Tth	Th	H	T	O
a.		4	0,	6	8	4,	1	2	7
b.		6	0,	9	0	0,	3	0	2
c.	1	0	4,	2	5	4,	1	6	9
d.		5	0,	0	6	0,	2	4	9
e.		9	0,	0	0	9,	0	1	0
f.	8	5	3,	6	5	4,	1	8	2
g.	5	0	0,	8	0	0,	0	0	6
h.	1	0	0,	0	0	2,	0	0	1

2. a. Thirty five million eight hundred sixty three thousand four hundred seventy five.
   b. Sixty million eight hundred seven thousand six hundred forty one.
   c. Two hundred sixty million one thousand ten.
   d. One hundred fifty million nine hundred five thousand four hundred nineteen.
   e. Four hundred thirty one million six hundred thousand two hundred forty eight.
   f. Three hundred ninety million three hundred thousand six.
   g. One hundred one million ten thousand one.
   h. Sixty three million six thousand one hundred.

3.

	HM	TM	M	Hth	Tth	Th	H	T	O
a.		1	0,	0	0	3,	0	3	6
b.		6	0,	0	4	4,	0	6	4
c.	6	1	6,	0	0	0,	6	0	5
d.	4	0	1,	0	0	2,	0	3	1
e.		1	9,	0	0	0,	0	1	9
f.		4	4,	1	1	9,	0	1	8
g.	3	8	9,	0	6	9,	0	4	8
h.	2	0	5,	1	0	8,	0	0	7

1.4

1. a. 3 times b. O c. M

2.

a.	XIV	14 = 10 + 4	= XIV
b.	XXVIII	28 = 20 +8	= XXVIII
c.	LXXV	75 = 50 + 10 + 10 + 5	= LXXV
d.	CXX	120 = 100 + 20	= CXX
e.	DVI	506 = 500 + 6	= DVI
f.	DCCCLXXIX	879 = 500 +100 +100+ 50 + 10 + 10+ 9	= DCCCLXXIX
g.	MCCXLVII	1247 = 1000 + 200 + 40 + 7	= MCCXLVII
h.	CCCVIII	308 = 100 + 100 + 100 + 8	= CCCVIII
i.	XCIX	99 = 90 + 9	= XCIX
j.	CCX	210 = 100 + 100 + 10	= CCX

3. a. XLV = XL + V
   = 40 + 5 =45
   b. CDIV = CD + IV
   = 400 + 4 = 404
   c. XCIV = XC + IV
   = 90 + 4 = 94

d. MXXXIV = M + XXX + IV
= 1000 + 30 + 4 = 1034

e. LXXVIII = LXX + VIII
= 50 + 10 + 10 + 8 = 78

Revision

1. b. 10 crores
2. c. 10 Lakh
3. b. 8
4. c. Ten lakhs
5. b. ten millions
6. c. Period
7. c. 1000
8. a. MMCCC = 1000 + 1000 + 300
= 2000 + 300 = 2300
9. b. Greatest 6-digit no. = 9 9 9 9 9 9
Greatest 7-digit no. = 9 9 9 9 9 9 9
+ 1 0 9 9 9 9 9 8
10. TM M HTh Tth Th H T O
a. 6 3, 9 6 5, 2 1 7
11. TC C TL L Tth Th H T O
a. 9 0 0 0 0 9 0 0 0
12. HM TM M HTh Tth Th H T O
a. 9 0, 0 9 0, 0 9 0
13. 9 0 7 2 1 0 6 0
→ 9 0, 0 0 0, 0 0 0 Ninety Million

2.1

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

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

c.
5 7 6 4 2 3 9
3 3 0 7 5 7 8 6
6 4 9 6 0 8 9 4 5
+ 9 6 5 7 8
6 8 8 5 4 5 5 4 8

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

2. a.

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

b.

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

c.

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

3. a.

	②	⑭	⑪	⑯	⑭	⑨	⑯	
	~~3~~	~~5~~	~~2~~	~~7~~	~~5~~	~~0~~	~~6~~	9
		8	7	8	9	1	7	8
	2	6	4	8	5	8	9	1

b.

	⑥	⑨	⑮	⑨	⑬	⑮	⑨	⑪	
	~~7~~	~~0~~	~~6~~	~~0~~	~~4~~	~~6~~	~~0~~	1	
		6	8	7	3	6	7	2	5
		0	1	8	6	7	8	7	6

c.

	⑧	⑨	⑬	⑨	⑨	⑨	⑩	⑬	
	~~9~~	~~0~~	~~4~~	~~0~~	~~0~~	~~0~~	~~1~~	~~3~~	
		6	0	5	0	2	4	1	7
	2	9	8	9	7	5	9	6	

d.

	⑥	⑨	⑪	⑬	⑩	⑭	⑪	⑨	⑯
	~~7~~	~~0~~	~~2~~	~~4~~	~~1~~	~~5~~	~~2~~	~~0~~	~~6~~
		6	0	3	5	1	6	4	3	8
		0	9	8	8	9	8	7	6	8

4. a.

	⑤	⑩	⓪	⑨	⑨	⑬	⑯
	~~6~~	~~0~~	~~1~~	~~0~~	~~0~~	~~4~~	~~6~~
	5	4	0	9	9	4	7
	0	6	0	0	0	9	9

b.

	⑧	⑨	⑨	⑬	⑪	⑨	⑮
	~~9~~	~~0~~	~~0~~	~~4~~	~~2~~	~~0~~	~~5~~
	5	9	0	6	3	0	7
	3	0	9	7	8	9	8

c.

	⑥	⑱	⑪	⑮	⑯	⑨	⑭
	~~7~~	~~9~~	~~2~~	~~6~~	~~7~~	~~0~~	~~4~~
	5	9	2	7	8	1	5
	1	9	9	8	8	8	9

d.

	⓪	⑪	⑨	⑮	⑬	⑭	⑨	⑱
	~~1~~	~~2~~	~~0~~	~~6~~	~~4~~	~~5~~	~~0~~	~~8~~
		8	0	7	5	6	9	9
		3	9	8	8	8	0	9

2.2

1. a. Total candidates = 506212
   No. of candidates passed in first division = 197538
   No. of candidates passed in second division = 238604
   No. of candidates passed in third division =
   506212 – (197538 + 238604)

$$\begin{array}{r} {\scriptstyle ①①①\ \ ①} \\ 1\,9\,7\,5\,3\,8 \\ +\ 2\,3\,8\,6\,0\,4 \\ \hline 4\,3\,6\,1\,4\,2 \end{array} \qquad \begin{array}{r} {\scriptstyle ④⑩\bigcirc①⑪} \\ \cancel{5}\,\cancel{0}\,\cancel{6}\,\cancel{2}\,\cancel{1}\,2 \\ -\ 4\,3\,6\,1\,4\,2 \\ \hline 0\,7\,0\,0\,7\,0 \end{array}$$

Hence, no. of candidates passed in third division is 70070.

2. Total population in city = 15207635
   No. of men = 6751574
   No. of women = 6036425
   No. of children =

$$15207635 - (6751574 + 6036425)$$

$$\begin{array}{r} 6\,7\,5\,1\,5\,7\,4 \\ +\ 6\,0\,3\,6\,4\,2\,5 \\ \hline 1\,2\,7\,8\,7\,9\,9\,9 \end{array} \qquad \begin{array}{r} {\scriptstyle ④⑪⑨⑯⑮⑫⑮} \\ 1\,\cancel{5}\,\cancel{2}\,\cancel{0}\,\cancel{7}\,\cancel{6}\,\cancel{3}\,\cancel{5} \\ -\ 1\,2\,7\,8\,7\,9\,9\,9 \\ \hline 2\,4\,1\,9\,6\,3\,6 \end{array}$$

Hence, no. of children in the city are 24,19,636.

3. Sum of two numbers = 13604050
   One of the number = 7824361
   Other number = 13604050 – 7824361 =

$$\begin{array}{r} {\scriptstyle ⑫⑮⑨⑬⑨⑭⑩} \\ 1\,\cancel{3}\,\cancel{6}\,\cancel{0}\,\cancel{4}\,\cancel{0}\,\cancel{5}\,\cancel{0} \\ -\ \ 7\,8\,2\,4\,3\,6\,1 \\ \hline 5\,7\,7\,9\,6\,8\,9 \end{array}$$

Hence, other number is 5779689.

4. Total candidates appeared = 1008314
   No. of candidates passed = 789425
   No. of candidates failed = 1008314 – 789425 =

$$\begin{array}{r} {\scriptstyle ⑨⑨⑰⑫⑩⑭} \\ 1\,\cancel{0}\,\cancel{0}\,\cancel{8}\,\cancel{3}\,\cancel{1}\,\cancel{4} \\ -\ \ 7\,8\,9\,4\,2\,5 \\ \hline 2\,1\,8\,8\,8\,9 \end{array}$$

Hence, 218889 candidates failed.

5. No. of votes with winning candidates = 6872403
   Margin vote = 983516
   No. of votes with losing candidates = 6872403 – 983516 =

$$\begin{array}{r} {\scriptstyle ⑤⑰⑯⑪⑬⑨⑬} \\ \cancel{6}\,\cancel{8}\,\cancel{7}\,\cancel{2}\,\cancel{4}\,\cancel{0}\,\cancel{3} \\ -\ \ 9\,8\,3\,5\,1\,6 \\ \hline 5\,8\,8\,8\,8\,8\,7 \end{array}$$

Hence, no. of votes with losing candidates are 58,88,887.

6. Number =

$$\begin{array}{r} {\scriptstyle (2)(14)(15)(13)\ \ (7)(13)(14)} \\ 3\ 5\ 6\ 3\ 7\ 8\ 4\ 4 \\ -\ 7\ 6\ 7\ 4\ 1\ 5\ 6 \\ \hline 2\ 7\ 9\ 6\ 3\ 6\ 8\ 8 \end{array}$$

7. Number to be added =

$$\begin{array}{r} {\scriptstyle (5)(10)(15)(13)(12)(11)(14)} \\ 6\ 1\ 6\ 4\ 3\ 2\ 4 \\ -\ 5\ 6\ 7\ 8\ 4\ 6\ 9 \\ \hline 0\ 4\ 8\ 5\ 8\ 5\ 5 \end{array}$$

8.

$$\begin{array}{r} {\scriptstyle (8)(10)\ \ (8)(13)(10)(13)} \\ 9\ 0\ 0\ 9\ 4\ 1\ 3 \\ -\ 8\ 9\ 0\ 6\ 5\ 9\ 5 \\ \hline 0\ 1\ 0\ 2\ 8\ 1\ 8 \end{array}$$

9. a.

$$\begin{array}{r} {\scriptstyle (6)(9)(10)(15)(13)(10)(18)} \\ 7\ 0\ 1\ 6\ 4\ 1\ 8 \\ -\ 6\ 4\ 3\ 7\ 8\ 5\ 9 \\ \hline 0\ 5\ 7\ 8\ 5\ 5\ 9 \end{array}$$

b.

$$\begin{array}{r} {\scriptstyle (6)(10)(9)(11)(12)(13)(10)} \\ 7\ 1\ 0\ 2\ 3\ 4\ 0 \\ -\ 6\ 8\ 2\ 4\ 5\ 7\ 2 \\ \hline 0\ 2\ 7\ 7\ 7\ 6\ 8 \end{array}$$

10. No. of e-rickshaws produced in one year = 7536265
No. of more e-rickshaws produced in next year = 2674589
No. of total e-rickshaws produced = 7536265 + 2674589

$$\begin{array}{r} {\scriptstyle (1)(1)(1)\ \ (1)(1)} \\ 7\ 5\ 3\ 6\ 2\ 6\ 5 \\ -\ 2\ 6\ 7\ 4\ 5\ 8\ 9 \\ \hline 1\ 0\ 2\ 1\ 0\ 8\ 5\ 4 \end{array}$$

No. of e-rickshaw were produced during two years
= 10210854 + 7536265 = 1, 77,47,119
Hence, 1, 77,47,119 e-rickshaws were produced during two years.

2.3

1. a. 1346 b. 0 c. 1 d. 203
e. 37 f. 1000, 50
2. a. 47180 b. 100750 c. 380000 d. 5207200
e. 5085000 f. 24385000
3. a. 3540 × 50

$$\begin{array}{r} {\scriptstyle (2)(2)} \\ 3\ 5\ 4 \\ \times\ 5 \\ \hline 1\ 7\ 7\ 0 \end{array}$$

∴ 3540 × 50 = 17700

b. 8984 × 60

$$\begin{array}{r} {\scriptstyle (5)(5)(2)} \\ 8\ 9\ 8\ 4 \\ \times\ 6 \\ \hline 5\ 3\ 9\ 0\ 4 \end{array}$$

∴ 8984 × 60 = 539040

c. 15235×60

$$\begin{array}{r} \overset{3}{1}\ \overset{1}{5}\ \overset{2}{2}\ \overset{3}{3}\ 5 \\ \times\ 6 \\ \hline 9\ 1\ 4\ 1\ 0 \end{array}$$

$\therefore\ 15235 \times 60 = 914100$

d. 9892×300

$$\begin{array}{r} \overset{2}{9}\ 8\ \overset{2}{9}\ 2 \\ \times\ 3 \\ \hline 2\ 9\ 6\ 7\ 6 \end{array}$$

$\therefore\ 9892 \times 300 = 2967600$

e. 5986×700

$$\begin{array}{r} \overset{6}{5}\ \overset{6}{9}\ \overset{4}{8}\ 6 \\ \times\ 7 \\ \hline 4\ 1\ 9\ 0\ 2 \end{array}$$

$\therefore\ 5986 \times 700 = 4190200$

f. 76305×800

$$\begin{array}{r} \overset{5}{7}\ \overset{2}{6}\ 3\ 0\ \overset{4}{5} \\ \times\ 8 \\ \hline 6\ 1\ 0\ 4\ 4\ 0 \end{array}$$

$\therefore\ 76305 \times 800 = 61044000$

g. 6981×4000

$$\begin{array}{r} \overset{3}{6}\ \overset{3}{9}\ 8\ 1 \\ \times\ 4 \\ \hline 2\ 7\ 9\ 2\ 4 \end{array}$$

$\therefore\ 6981 \times 400 = 27924000$

h. 7007×9000

$$\begin{array}{r} \overset{6}{7}\ 0\ 0\ 7 \\ \times\ 9 \\ \hline 6\ 3\ 0\ 6\ 3 \end{array}$$

$\therefore\ 7007 \times 900 = 63063000$

i. 99999×3000

$$\begin{array}{r} \overset{2}{9}\ \overset{2}{9}\ \overset{2}{9}\ \overset{2}{9}\ 9 \\ \times\ 3 \\ \hline 2\ 9\ 9\ 9\ 9\ 7 \end{array}$$

$\therefore\ 99999 \times 3000 = 299997000$

4. a. $2 \times 367 \times 50$
$= (2 \times 50) \times 367$
$= 100 \times 367 = 36700$

b. $5 \times 1900 \times 20$
$= (5 \times 20) \times 1900$
$= 100 \times 1900 = 190000$

c. $4 \times 629 \times 25$
$= (4 \times 25) \times 629$
$= 100 \times 629 = 62900$

d. $4 \times 248 \times 125$
$= (4 \times 125) \times 248$
$= 500 \times 248$

$$\begin{array}{r} \overset{2}{2}\ \overset{4}{4}\ 8 \\ \times\ 5 \\ \hline 1\ 2\ 4\ 0 \end{array}$$

$= 500 \times 248 = 124000$

e. $(8 \times 125) \times 6475$
$= 1000 \times 6475$
$= 6475000$

f. $2 \times 5726 \times 800$
$= (2 \times 800) \times 5726$
$= 1600 \times 5726$

$$\begin{array}{r} {\scriptstyle ④\,①\,③} \\ 5\,7\,2\,6 \\ \times\ 1\,6 \\ \hline 3\,4\,3\,5\,6 \\ 5\,7\,2\,6\,0 \\ \hline 9\,1\,6\,1\,6 \end{array}$$

$= 5726 \times 1600 = 9161600$

2.4

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

b.
$$\begin{array}{r} 4\,0\,0\,0 \\ \times\ 1\,7\,0\,8 \\ \hline 3\,2\,0\,0\,0 \\ 0\,0\,0\,0\,0 \\ 2\,8\,0\,0\,0\,0\,0 \\ +\ 4\,0\,0\,0\,0\,0\,0 \\ \hline 6\,8\,3\,2\,0\,0\,0 \end{array}$$

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

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

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

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

2. a.

$$\begin{array}{r} 10354 \\ \times\ 775 \\ \hline 51770 \\ 724780 \\ +\ 7247800 \\ \hline 8024350 \end{array}$$

b.

$$\begin{array}{r} 10067 \\ \times\ 1025 \\ \hline 50335 \\ 201340 \\ +\ 00000000 \\ \hline 10067000 \\ \hline 10318675 \end{array}$$

c.

$$\begin{array}{r} 9985 \\ \times\ 1789 \\ \hline 89865 \\ 798800 \\ 6989500 \\ +\ 9985000 \\ \hline 17863165 \end{array}$$

d.

$$\begin{array}{r} 10023 \\ \times\ 1034 \\ \hline 40092 \\ 300690 \\ 0000000 \\ +\ 10023000 \\ \hline 10363782 \end{array}$$

e.

$$\begin{array}{r} 50185 \\ \times\ 1648 \\ \hline 401480 \\ 2007400 \\ 30111000 \\ +\ 50185000 \\ \hline 82704880 \end{array}$$

f.

$$\begin{array}{r} 95487 \\ \times\ 1521 \\ \hline 95487 \\ 1909740 \\ 47743500 \\ +\ 95487000 \\ \hline 145235727 \end{array}$$

2.5

1. Cost of one mobile = ₹ 36499

Cost of 170 mobile = ₹ 36499 × 170

$$\begin{array}{r} 36499 \\ \times\ 170 \\ \hline 00000 \\ 2554930 \\ +\ 3649900 \\ \hline 6204830 \end{array}$$

Hence cost of 170 mobile is 62,04,830

2. Cost of one table = ₹ 2895
Cost of 2000 mobile = ₹ 2895 × 2000

$$\begin{array}{r} 2\ 8\ 9\ 5 \\ \times\ \ \ \ 2 \\ \hline 5\ 7\ 9\ 0 \end{array}$$

$\therefore 2895 \times 2000 = 5790000$

Hence, cost of 2000 tables is ₹ 57,90,000

3. Weight of goods in one truck = 8765 kg
Weight of goods in 659 truck = 8765 × 659

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

Hence, weight of goods in 659 trucks is 5776135 kg

4. No. of pencils in one box = 2700
No. of pencils in 1600 boxes = 2700 × 1600

$$\begin{array}{r} 2\ 7 \\ \times\ 1\ 6 \\ \hline 1\ 6\ 2 \\ +\ 2\ 7\ 0 \\ \hline 4\ 3\ 2 \end{array}$$

$\therefore 1600 \times 2700 = 4320000$

Hence, no. of pencils in 1600 boxes are 4320000

5. Length of one bundle rope = 548 m
Length of 1265 bundle rope = 548 × 1265

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

Hence, length of 1265 bundles of rope is 693220 m

6. Length of cloth produced in one day = 5746 m
Length of cloth produced in 125 day = 5746 × 125

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

Hence, length of cloth produced in 125 days is 718250 m.

7. No. of student in a school = ₹ 1869
Fees paid annually = ₹ 27650
Ammount collected in a year = 27650 × 1869

$$\begin{array}{r} 2\ 7\ 6\ 5\ 0 \\ \times\ 1\ 8\ 6\ 9 \\ \hline 2\ 4\ 8\ 8\ 5\ 0 \\ 1\ 6\ 5\ 9\ 0\ 0\ 0 \\ 2\ 2\ 1\ 2\ 0\ 0\ 0\ 0 \\ 2\ 7\ 6\ 5\ 0\ 0\ 0\ 0 \\ \hline 5\ 1\ 6\ 7\ 7\ 8\ 5\ 0 \end{array}$$

Hence, ammount collected in a year is ₹ 5,16,77,850

8. No. of wheat bags in a godown = 1583
Weight of each bag = 108 kg
Total weight of these bags = 1583 × 108

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

Hence, total weight of these bags is 170964 kg

9. No. of columns = 125
No. of lines in one column = 125 × 100
No. of letters in newspaper = 30
Total no. of letters in newspaper = 125 × 100 × 30 =
= 375000

Hence, total no. of letters in newspaper in 375000.

10. i. 528 × 637 × 86

$$
\begin{array}{r}
528 \\
\times\ 637 \\
\hline
3696 \\
15840 \\
+\ 316800 \\
\hline
336336 \\
\hline
\end{array}
\qquad
\begin{array}{r}
336336 \\
\times\ 86 \\
\hline
2018016 \\
26906880 \\
\hline
28924896 \\
\hline
\end{array}
$$

ii. 4356 × (125 × 00)

$$
\begin{array}{r}
4356 \\
\times\ 125 \\
\hline
21780 \\
87120 \\
+\ 435600 \\
\hline
544500 \\
\hline
\end{array}
$$

∴ 4356 × 12500 = 54450000

2.6

1. a. 83254 ÷ 58

$$
\begin{array}{r}
58\ )\ 83254\ (\ 1435 \\
58 \\
\hline
252 \\
232 \\
\hline
205 \\
174 \\
\hline
314 \\
-\ 290 \\
\hline
24 \\
\hline
\end{array}
$$

Q = 1435
R = 24

b. 83254 ÷ 97

$$
\begin{array}{r}
97\ )\ 547802\ (\ 5647 \\
485 \\
\hline
628 \\
582 \\
\hline
460 \\
388 \\
\hline
722 \\
-\ 679 \\
\hline
43 \\
\hline
\end{array}
$$

Q = 5647
R = 43

c. 83254 ÷ 86

```
86 ) 6 7 3 9 0 0 ( 7836
     6 0 2 ↓
     -------
       7 1 9
       6 8 8 ↓
       -----
         3 1 0
         2 5 8 ↓
         -----
           5 2 0
         - 5 1 6
         -------
               4
```

Q = 7836
R = 4

d. 1808016 ÷ 359

```
359 ) 1 8 0 8 0 1 6 ( 5036
      1 7 9 5 ↓ ↓
      ---------
          1 3 0 1
          1 0 7 7 ↓
          -------
            2 2 4 6
          - 2 1 5 4
          ---------
              0 9 2
```

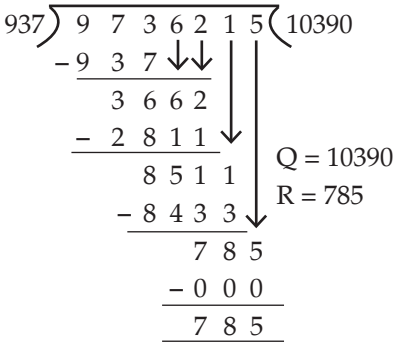
Q = 5036
R = 92

e. 8670863 ÷ 561

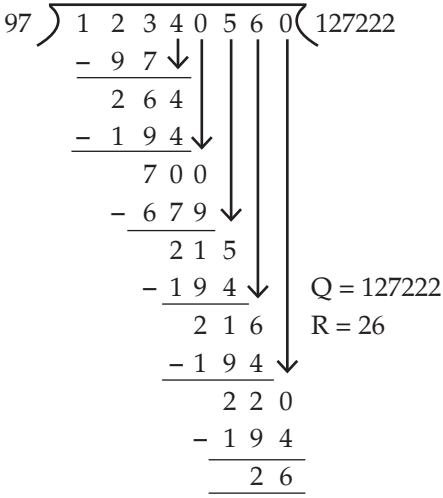
```
561 ) 8 6 7 0 8 6 3 ( 15456
    - 5 6 1 ↓
      -----
      3 0 6 0
    - 2 8 0 5 ↓
      -------
        2 5 5 8
      - 2 2 4 4 ↓
        ---------
          3 1 4 6
        - 2 8 0 5 ↓
          ---------
            3 4 1 3
          - 3 3 6 6
          ---------
                4 7
```

Q = 15456
R = 47

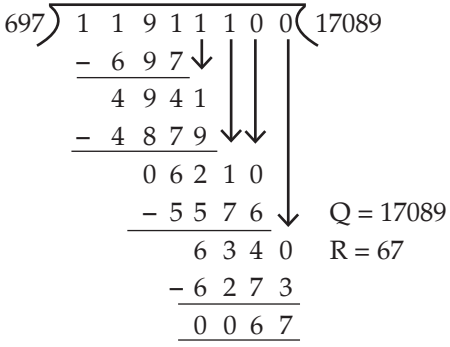
f. 9736215 ÷ 937



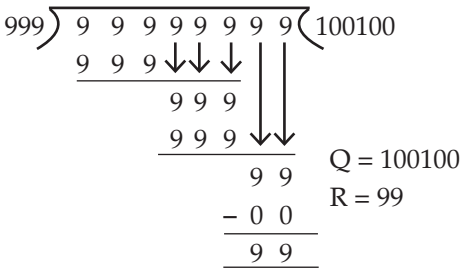
g. 12340560 ÷ 97



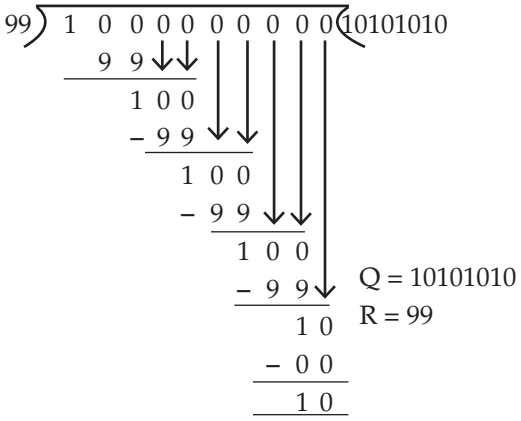
h. 11911100 ÷ 697



2. Largest 8- digit no. = 9 9 9 9 9 9 9 9
Largest 3- digit no. = 9 9 9



3. Smallest 9- digit no. = 1 0 0 0 0 0 0 0 0
Largest 2- digit no. = 9 9



4. Dividend = Divisor × Quotient + Remainder
= 187 × 3078 + 96

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

= 575586 + 96 = 575682

2.7

1. No. of pens in one box = 275
Total no. of pens = 4426125

No. of boxes = 4426125 ÷ 275

```
275 ) 4 4 2 6 1 2 5 ( 16095
    - 2 7 5
      1 6 7 6
    - 1 6 5 0
          2 6 1 2
        - 2 4 7 5
            1 3 7 5
          - 1 3 7 5
              0
```

Hence, 16095 boxes are required.

2. No. of boxes = 845
   No. of alpins = 7359105
   No. of alpins in one box = 7359105 ÷ 845

```
845 ) 7 3 5 9 1 0 5 ( 8709
    - 6 7 6 0
      5 9 9 1
    - 5 9 1 5
          7 6 0 5
        - 7 6 0 5
            0
```

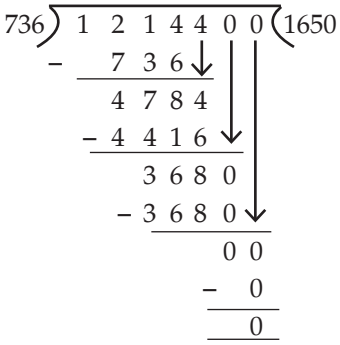
Hence, there are 8709 alpins in one box.

3. No. of air conditioners = 125
   Cost of 1125 air conditioners = ₹ 2236875
   Cost of 1 air conditioners = 2236875 ÷ 125

```
125 ) 2 2 3 6 8 7 5 ( 17895
    - 1 2 5
      9 8 6
    - 8 7 5
      1 1 1 8
    - 1 0 0 0
        1 1 8 7
      - 1 1 2 5
            6 2 5
          - 6 2 5
              0
```

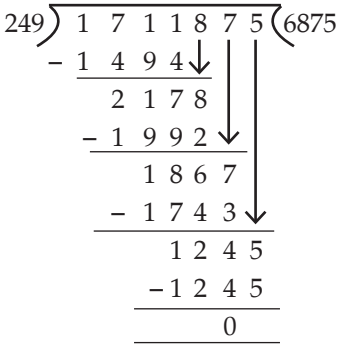
Hence, cost of 1 air conditioner is ₹ 17895

4. Cost of 736 quintals of maize = ₹ 1214400
Cost of 1 quintals of maize = 1214400 ÷ 736



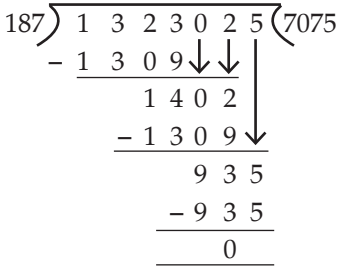
Hence, cost of 1 quintal maize is ₹ 1650.

5. 249 trucks can carry = 1711875 kg
1 truck can carry = 1711875 ÷ 249



Hence, one truck can carry 6875.

6. Quantity of water in 187 water tanks = 1323025 *l*
Quantity of water in 1 water tanks = 1323025 ÷ 187



Hence, 7075 *l* of water is in 1 watertank.

7. Cost of one calculator = ₹ 845
Total amount collected by selling calculator in one month
= ₹ 742755

No. of calculators sold in one month = 742755 ÷ 845 =

```
845 ) 7 4 2 7 5 5 ( 879
    - 6 7 6 0 ↓
      6 6 7 5
    - 5 9 1 5 ↓
        7 6 0 5
      - 7 6 0 5
        -------
            0
```

Hence, 879 calculators are sold in one month.

8. Total no. of books = 669375
No. of books in one shelf = 375
No. of shelves = 669375 ÷ 375

```
375 ) 6 6 9 3 7 5 ( 1785
    - 3 7 5 ↓
      2 9 4 3
    - 2 6 2 5 ↓
        3 1 8 7
      - 3 0 0 0 ↓
          1 8 7 5
        - 1 8 7 5
          -------
              0
```

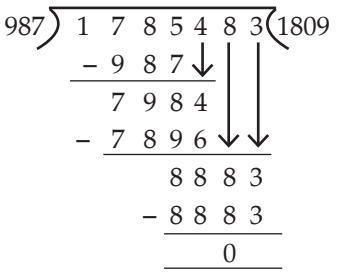
Hence, 1785 shelves are refused.

9. Total persons visited in zoo in 327 days = 950589
No. of persons visited in 1 day = 950589 ÷ 327

```
327 ) 9 5 0 5 8 9 ( 2907
    - 6 5 4 ↓
      2 9 6 5
    - 2 9 4 3 ↓ ↓
          2 2 8 9
        - 2 2 8 9
          -------
              0
```

Hence, 2907 persons visited in 1 day.

10. Products of two numbers = 987
Other number = 1785483 ÷ 987



Hence, other number is 1809.

2.8

1. $25 + 9 \div 3$
$= 25 + 3 = 28$

2. $19 \times 8 \div 4$
$= 19 \times 2 = 38$

3. $23 - 8 \times 2$
$= 23 - 16 = 7$

4. $48 \div 8 + 4 \times 6 - 2$
$= 6 + 24 - 2$
$= 30 - 2 = 28$

5. $100 - 72 \div 8 + 6 \times 2$
$= 100 - 9 + 12$
$= 112 - 9 = 103$

6. $30 + 125 \div 25 \times 4 - 18$
$= 30 + 5 \times 4 - 18$
$= 30 + 20 - 18$
$= 50 - 18 = 32$

7. $8 \times 6 + 36 \div 9 - 18$
$= 48 + 4 - 18$
$= 52 - 18 = 34$

8. $90 - 36 \div 4 \times 2 + 7$
$= 90 - 9 \times 2 + 7$
$= 90 - 18 + 7$
$= 97 - 18 = 79$

9. $56 \div 14 \times 3 - 10 \div 5 + 1$
$= 4 \times 3 - 2 + 1$
$= 12 - 2 + 1 = 11$

10. $198 - 42 \times 54 \div 18 + 6$
$= 198 - 42 \times 3 + 6$
$= 198 - 126 + 6 = 204 - 126 = 78$

11. $105 \times 15 \div 3 + 6 - 1$
$= 105 \times 5 + 6 - 1$
$= 525 + 6 - 1$
$= 531 - 1 = 530$

12. $100 + 900 \div 100 \times 5 - 20$
$= 100 + 9 \times 5 - 20$
$= 100 + 45 - 20$
$= 145 - 20 = 125$

2.9

1. a. $20 - \{18 \div (7 - 2 + 1)\}$
$= 20 - \{18 \div 6\}$
$= 20 - 3 = 17$

b. $23 - [\, 6 + \{8 - (9 - 6)\}\,]$
$= 23 - [\, 6 + \{8 - (3)\}\,]$
$= 23 - [\, 6 + 5\,]$
$= 23 - 11 = 12$

c. $2\,[19 - \{7 + (12 \div 4\}]$
$= 2\,[19 - \{7 + 3\}]$
$= 2\,[19 - 10]$
$= 2 \times 9 = 18$

d. $40 - [12 + \{16 - (12 \div 3)\}]$
$= 40 - [12 + \{16 - 4\}]$
$= 40 - [12 + 12]$
$= 40 - 24 = 16$

e. $[\{(30 - 9 - 6) \div 3\} \times 6 + 6]$
$= [\{(30 - 3) \div 3\} \times 6 + 6]$
$= [\{(27) \div 3\} \times 6 + 6]$
$= [9 \times 6 + 6] = [54 + 6] = 60$

f. $12 - [6 \div 3 + \{8 \div 2\,(8 - 6)\}]$
$= 12 - [2 + \{4 \times 2)\}]$
$= 12 - [2 + 8]$
$= 12 - 10 = 2$

g. $[40 \div \{19 - 3\,(6 - 4 - 1)\}]$
$= [40 \div \{19 - 3\,(6 - 3)\}]$
$= [40 \div \{19 - 3 \times 3)\}]$
$= [40 \div \{19 - 9)\}]$
$= 40 \div 10 = 4$

h. $[105 \div \{23 + 2\,(9 - 5 - 2)\}]$
$= [105 \div \{23 + 2\,(9 - 3)\}]$
$= [105 \div \{23 + 2 \times 6)\}]$
$= [105 \div \{23 + 12)\}]$
$= [105 \div 35] = 3$

Revision

1. a. True b. True c. False d. True
2. i. c 20000000 / 2 crore
   ii. d 0
   iii. b

$$\begin{array}{r} 3\ 0\ 0\ 1 \\ \times\ 1\ 0\ 1 \\ \hline 3\ 0\ 0\ 1 \\ 0\ 0\ 0\ 0 \\ +\ 3\ 0\ 0\ 1\ 0\ 0 \\ \hline 3\ 0\ 3\ 1\ 0\ 1 \end{array}$$

   iv. c

$$\begin{array}{r} \overset{7}{\cancel{8}}\ \overset{16}{\cancel{7}}\ \overset{9}{\cancel{0}}\ \overset{10}{\cancel{1}}\ \overset{13}{\cancel{3}} \\ -\ 6\ 8\ 9\ 6\ 5 \\ \hline 1\ 8\ 0\ 4\ 8 \end{array}$$

   v. d. No. of gift in one bag = 560
   No. of gifts in 148 bags = 560×148

$$\begin{array}{r} 5\ 6\ 0 \\ \times\ 1\ 4\ 8 \\ \hline 4\ 4\ 8\ 0 \\ 2\ 2\ 4\ 0\ 0 \\ +\ 5\ 6\ 0\ 0\ 0 \\ \hline 8\ 2\ 8\ 8\ 0 \end{array}$$

vi. d. Saving per month = ₹ 485

Saving per year = ₹ 485 × 12

Saving 5 yearss = ₹ 485 × 12 × 5

= ₹ 485 × 60 =

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

vii. c. $100 \div 10 + 10 \times 10$

$10 + 10 \times 10 = 10 + 100 = 110$

viii. d. $49 \div 7 \times 7 + 5 \times 3 - 2$

$7 \times 7 + 15 - 2 = 49 + 13 = 62$

ix. a. $5721 \times \{45 - (90 \div 2)\}$

$5721 \times \{45 - 45)\} = 5721 \times 0 = 0$

x. b. $100 \times 10 - 100 + 2000 \div 100$

$1000 - 100 + 20 = 900 + 20 = 920$

xi. d. 0 stands for 'of'

3.1

1. a. 1 b. 2 c. 97 d. 4 e. 1 f. 2
2. a. 20, 40, 60, 80, 100, 120
   b. 45, 90, 135, 180, 225, 270
   c. 32, 64, 96, 128, 160, 192
   d. 50, 100, 150, 200, 250, 300
3. a. Factor of 9 are 1, 3, 3, 9
   Factor of 21 are 1, 3, 7, 21
   Common factor = 1, 3
   b. Factor of 35 are 1, 5, 7, 35
   Factor of 50 are 1, 2, 5, 10, 25, 50
   Common factor = 1, 5
   c. Factor of 24 are 1, 2, 3, 4, 6, 8, 12, 24
   Factor of 36 are 1, 2, 3, 4, 6, 9, 12, 18, 36
   Common factor = 1, 2, 3, 4, 6, 12
4. a. yes b. No c. Yes d. No
5. Prime numbers = 11, 67, 19, 83, 89
6. Composite numbers = 51, 87, 81, 78 and 93
7. a. Prime no. between 1-50 : 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47.
   b. Prime no. between 51-100 : 53, 59, 61, 67, 71, 73, 79, 83, 89, 97.

8. Twin Prime no.s between 1-50 : (3, 5), (5, 7), (11, 13), (17, 19), (29, 31), (41, 43)
9. Composite number between 20-40: (21, 22, 24, 25, 26, 27, 28, 30, 32, 33, 34, 35, 36, 38, 39)

3.2

1. a.

2	60
2	30
3	15
5	5
	1

Prime factorisation of 60 = 2 × 2 × 3 × 5

b.

2	54
3	27
3	9
3	3
	1

Prime factorisation of 54 = 2 × 3 × 3 × 3

c.

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

Prime factorisation of 144 = 2 × 2 × 2 × 2 × 3 × 3

d.

2	600
2	300
2	150
3	75
5	25
5	5
	1

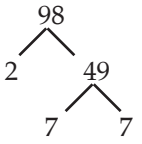
Prime factorisation of 600 = 2 × 2 × 2 × 3 × 5 × 5

e.

2	728
2	364
2	182
13	91
7	7
	1

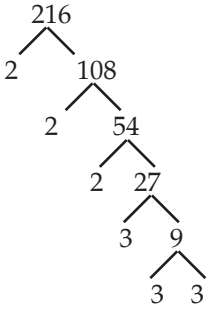
Prime factorisation of 144 = 2 × 2 × 2 × 13 × 7

2. a.



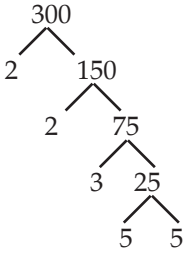
Prime factorisation of 98 = 2 × 7 × 7

b.



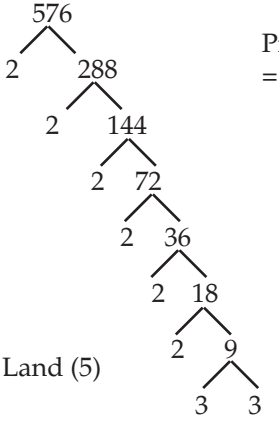
Prime factorisation of 216
= 2 × 2 ×2 × 3 × 3 × 3

c.



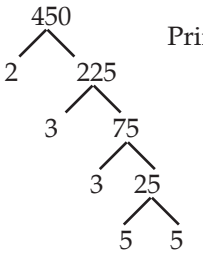
Prime factorisation of 300
= 2 × 2 × 3 × 5 × 5

d.



Prime factorisation of 576
= 2 × 2 × 2 × 2 × 2 × 2 × 3 × 3

e.



Prime factorisation of 450 = 2 × 3 × 3 × 5 × 5

3.3

1. a. Factor of 32
1 × 32 = 32
2 × 16 = 32
4 × 8 = 32

Factor of 40
1 × 40 = 40
2 × 20 = 40
4 × 10 = 40
5 × 8 = 40

Factor of 32
1, 2, 4, 8, 16, 32

Factor of 40
1, 2, 4, 5, 8, 10, 20, 40

Common factors = 1, 2, 4, 8
HCF = 8

b. Factor of 8
1 × 8 = 8
2 × 4 = 8

Factor of 20
1 × 20 = 20
2 × 10 = 20
4 × 5 = 20

Factor of 32
1 × 32 = 32
2 × 16 = 32
4 × 8 = 32

Factor of 8
1, 2, 4, 8

Factor of 20
1, 2, 4, 5, 10, 20

Factor of 32
1, 2, 4, 8, 16, 32

Common factors = 1, 2, 4
HCF = 4

c. Factor of 14
1 × 14 = 14
2 × 7 = 14

Factor of 28
1 × 28 = 28
2 × 14 = 28
4 × 7 = 28

Factor of 35
1 × 35 = 35
5 × 7 = 35

Factor of 14
1, 2, 7, 14

Factor of 28
1, 2, 4, 7, 14, 28

Factor of 35
1, 5, 7, 35

Common factors = 1, 7
HCF = 7

D. Factor of 16
1 × 16 = 16
2 × 8 = 16
4 × 4 = 16

Factor of 20
1 × 20 = 20
2 × 10 = 20
4 × 5 = 20

Factor of 36
1 × 36 = 36
2 × 18 = 36
3 × 12 = 36
4 × 9 = 36
6 × 6 = 36

Factor of 16	Factor of 20	Factor of 36
1, 2, 4, 8, 16	1, 2, 4, 5, 10, 20	1, 2, 3, 4, 6, 9, 12, 18, 36

Common factors = 1, 2, 4
HCF = 4

2. a.

3	21
7	7
	1

2	28
2	14
7	7
	1

$21 = 3 \times \underline{7}$
$28 = \quad \underline{7} \times 2 \times 2$, HCF = 7

b.

2	24
2	12
2	6
3	3
	1

2	40
2	20
2	10
5	5
	1

2	56
2	28
2	14
7	7
	1

$24 = 2 \times 2 \times 2 \times 3$
$40 = 2 \times 2 \times 2 \times \quad 5$
$56 = 2 \times 2 \times 2 \times \quad \times 7$
HCF = $2 \times 2 \times 2 = 8$

c.

2	36
2	18
3	9
3	3
	1

2	48
2	24
2	12
2	6
3	3
	1

2	72
2	36
2	18
3	9
3	3
	1

$36 = \underline{2} \times \underline{2} \times \underline{3} \times 3$
$48 = \underline{2} \times \underline{2} \times \underline{3} \times \quad 2 \times 2$
$72 = \underline{2} \times \underline{2} \times \underline{3} \times \quad 2 \quad \times 3$
HCF = $2 \times 2 \times 3 = 12$

d.

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

2	180
2	90
3	45
3	15
5	5
	1

2	252
2	126
3	63
3	21
7	7
	1

144 = 2 × 2 × 2 × 2 × 3 × 3
180 = 2 × 2 × 3 × 3 × 5
252 = 2 × 2 × 3 × 3 × × 7
HCF = 2 × 2 × 3 × 3 = 36

e.

2	42
3	21
7	7
	1

3	63
3	21
7	7
	1

3	105
5	35
7	7
	1

42 = 2 × 3 × 7
63 = 3 × 7 × 3
105 = 3 × 7 × × 5
HCF = 7 × 3 = 21

f.

7	91
13	13
	1

7	49
7	7
	1

2	112
2	56
2	28
2	14
7	7
	1

91 = 7 × 13
49 = 7 × × 7
112 = 7 × 2 × 2 × 2 × 2
HCF = 7

g.

2	112
2	56
2	28
2	14
7	7
	1

2	140
2	70
5	35
7	7
	1

2	168
2	84
2	42
3	21
7	7
	1

$112 = \underline{2} \times \underline{2} \times 2 \times 2 \times \underline{7}$
$140 = \underline{2} \times \underline{2} \times 5 \times \underline{7}$
$168 = \underline{2} \times \underline{2} \times 2 \times 3 \times \underline{7}$
HCF = $2 \times 2 \times 7 = 28$

h.

2	168
2	84
2	42
3	21
7	7
	1

2	216
2	18
3	9
3	3
	1

$168 = \underline{2} \times \underline{2} \times 2 \times \underline{3} \times \underline{7}$
$216 = \underline{2} \times \underline{2} \times \underline{3} \times 3$
HCF = $2 \times 2 \times 3 = 12$

3. a.

2	16, 60
2	8, 30
	4, 15

$2 \times 2 = 4$, HCF = 4

b.

2	30, 50
5	15, 25
	3, 5

$2 \times 5 = 10$, HCF = 10

c.

2	18, 48
3	9, 24
	3, 8

$2 \times 3 = 6$, HCF = 6

d.

2	24, 80
2	12, 40
2	6, 20
	3, 10

$2 \times 2 \times 2 = 8$, HCF = 8

e.

2	24, 48, 72
2	12, 24, 36
2	6, 12, 18
3	3, 6, 9
	1, 2, 3

$2 \times 2 \times 2 \times 3 = 24$, HCF = 24

f.

2	42, 70, 112
7	21, 35, 56
	3, 5, 8

$2 \times 7 = 14$, HCF = 14

g.

2	48, 80, 96
2	24, 40, 48
2	12, 20, 24
2	6, 10, 12
	3, 5, 6

$2 \times 2 \times 2 \times 2 = 16$, HCF = 16

h.

2	144, 180, 192
2	72, 90, 96
3	36, 45, 48
	12, 15, 16

$2 \times 2 \times 3 = 12$, HCF = 12

4. a. 112, 140, 168

$$
\begin{array}{r}
112\overline{)\,1\;4\;0\,(1} \\
\underline{1\;1\;2} \\
2\;8\overline{)1\;1\;2\,(4} \\
\underline{-1\;1\;2} \\
0
\end{array}
$$

$$
\begin{array}{r}
28\overline{)\,1\;6\;8\,(6} \\
\underline{1\;6\;8} \\
0
\end{array}
$$

HCF of 112, 140 is = 28
HCF of 28 and 168 is = 6

b. 75, 100, 140

$$
\begin{array}{r}
75\overline{)\,1\;0\;0\,(1} \\
\underline{-7\;5} \\
2\;5\overline{)7\;5\;\;(3} \\
\underline{-7\;5} \\
0
\end{array}
$$

$$
\begin{array}{r}
25\overline{)\,1\;4\;0\,(5} \\
\underline{-1\;2\;5} \\
1\;5\overline{)2\;5\,(1} \\
\underline{-1\;5} \\
1\;0\overline{)1\;5\,(1} \\
\underline{-\;1\;0} \\
5\overline{)1\;0\,(2} \\
\underline{1\;0} \\
0
\end{array}
$$

HCF of 75, 100 is = 25
HCF of 25 and 140 is = 5

c.

$$
\begin{array}{r}
270\overline{)\,9\;4\;5\,(3} \\
\underline{8\;1\;0} \\
1\;3\;5\overline{)2\;7\;0\,(2} \\
\underline{-2\;7\;0} \\
0
\end{array}
$$

135) 2 1 7 5 (1
2 1 6 0
1 5) 1 3 5 (9
1 3 5
0

HCF of 270, 945 is = 135

HCF of 135 and 175 is = 15

d. 217, 385, 735

217) 3 8 5 (1
− 2 1 7
1 6 8) 2 1 7 (4
− 1 6 8
0 4 9) 1 6 8 (2
1 4 7
2 1) 4 9 (2
4 2
7) 2 1 (3
− 2 1
0

7) 7 3 5 (105
7 3 5
0

HCF of 217, 385 is = 21

HCF of 7 and 735 is = 7

3.4

1. a.

2	20
2	10
5	5
	1

2	26
13	13
	1

$20 = 2 \times 2 \times 5$ $\quad 26 = 2 \times 13$

LCM of 20 and 26 = $2 \times 2 \times 13 \times 5 = 260$

b.

3	30
2	10
5	5
	1

5	45
3	9
3	3
	1

$30 = 3 \times 2 \times 5$ $45 = 5 \times 3 \times 3$

LCM of 30 and $45 = 3 \times 2 \times 5 \times 3 = 90$

c.

3	63
3	21
7	7
	1

5	105
3	21
7	7
	1

$63 = 3 \times 3 \times 7$ $105 = 5 \times 3 \times 7$

LCM of 63 and $105 = 3 \times 3 \times 7 \times 5 = 315$

d.

2	28
2	14
7	7
	1

2	56
2	28
7	14
7	7
	1

2	84
2	42
3	21
7	7
	1

$28 = 2 \times 2 \times 7$ $56 = 2 \times 2 \times 2 \times 7$ $84 = 2 \times 2 \times 3 \times 7$

LCM of 28, 56, $84 = 2 \times 2 \times 2 \times 3 \times 7 = 168$

e.

5	75
5	15
3	3
	1

5	105
3	21
7	7
	1

5	135
3	27
3	9
3	3
	1

$75 = 5 \times 5 \times 3$ $105 = 5 \times 3 \times 7$ $135 = 5 \times 3 \times 3 \times 3$

LCM of 75, 105, $135 = 5 \times 5 \times 3 \times 3 \times 3 \times 7 = 4725$

f.

3	90
3	30
2	10
5	5
	1

2	108
2	54
3	27
3	9
3	3
	1

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

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

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

$144 = 2 \times 2 \times 2 \times 2 \times 3 \times 3$

LCM of 90, 108, $144 = 3 \times 3 \times 3 \times 2 \times 2 \times 2 \times 2 \times 5 = 2160$

2. a.

3	15, 60
5	5, 20
4	1, 4
	1, 1

LCM 0f 15, 60 = 3 × 5 × 4 = 60

b.

2	42, 56
3	21, 28
7	7, 28
4	1, 4
	1, 1

LCM of 42, 56 = 2 × 3 × 7 × 4 = 168

c.

2	28, 42, 56
2	14, 21, 28
7	7, 21, 14
2	1, 3, 2
3	1, 3, 1
	1, 1, 1

LCM 0f 28, 42, 56 = 2 × 2 × 7 × 2 × 3 = 168

d.

2	96, 144, 192
2	48, 72, 96
2	24, 36, 48
3	12, 18, 24
2	4, 6, 8
2	2, 3, 4
2	1, 3, 2
3	1, 3, 1
	1, 1, 1

LCM of 96, 144, 192 = 2 × 2 × 2 × 3 × 2 × 2 × 2 × 3 = 576

e.

2	175, 182, 350
13	175, 91, 175
7	175, 7, 175
5	25, 1, 25
5	5, 1, 5
	1, 1, 1

LCM 0f 175, 182, 350 = 2 × 13 × 7 × 5 × 5 = 4550

f.

5	75, 100, 150
5	15, 20, 30
3	3, 4, 6
2	1, 4, 2
2	1, 2, 1
	1, 1, 1

LCM of 75, 100, 150 = 5 × 5 × 3 × 2 × 2 = 300

g.

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

LCM of 102, 136, 170 = 2 × 3 × 17 × 4 × 5 = 2040

h.

2	64, 72, 96, 108
2	32, 36, 48, 54
2	16, 18, 24, 27
2	8, 9, 12, 27
2	4, 9, 6, 27
2	2, 9, 3, 27
3	1, 9, 3, 27
3	1, 3, 1, 9
3	1, 1, 1, 3
	1, 1, 1, 1

LCM of 64, 72, 96, 108 = 2 × 2 × 2 × 2 × 2 × 2 × 3 × 3 × 3 = 1728

Revision

1. d.

2	88
2	44
2	22
11	11
	1

88 = 2 × 2 × 2 × 11

2. d. Both (a) and (c)
3. b. 1
4.

3	36
3	12
4	4
	1

36 = 3 × 3 × 4

3	84
7	28
4	4
	1

84 = 3 × 7 × 4

Common factors = 3 × 4

HCF = 12

5. c. 6 + 12 + 18 + 24 + 30 = 90

6. d. 27 Prime number between 1 and 100

7. LCM of 24, 36 and 40

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

LCM of 24, 36, 40 = 2 × 2 × 2 × 3 × 3 × 5 = 360

8. d. 90 and 100

9. a. Twin Primes

4.1

1. a. $\frac{2}{5}, \frac{1}{5}, \frac{4}{5}$ b. $\frac{8}{13}, \frac{6}{13}, \frac{10}{13}, \frac{9}{13}$

2. Proper fractions a, b, f, h

3. a. $8\overline{)63(7}$, -56, 7 $= 7\frac{7}{8}$ b. $13\overline{)60(4}$, -52, 8 $= 4\frac{8}{13}$

   c. $18\overline{)23(1}$, -18, 5 $= 1\frac{5}{18}$ d. $17\overline{)50(2}$, -34, 16 $= 2\frac{16}{17}$

4. a. $6\frac{1}{2} = \frac{6 \times 2 + 1}{2} = \frac{13}{2}$ b. $3\frac{1}{2} = \frac{2 \times 3 + 1}{2} = \frac{7}{2}$

   c. $5\frac{3}{8} = \frac{8 \times 5 + 3}{8} = \frac{43}{8}$ d. $3\frac{3}{8} = \frac{8 \times 3 + 3}{8} = \frac{27}{8}$

4.2

1. a. 25 ÷ 40 b. 72 ÷ 80 c. 14 ÷ 35 d. 18 ÷ 90

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

   $\frac{3}{5} \times \frac{3}{3} = \frac{9}{15}$

$$\frac{3}{5} \times \frac{4}{4} = \frac{12}{20}$$

$$\therefore \frac{3}{5} = \frac{6}{10} = \frac{9}{15} = \frac{12}{20}$$

b. $\frac{8}{11} \times \frac{2}{2} = \frac{16}{22}$

$$\frac{8}{11} \times \frac{3}{3} = \frac{24}{33}$$

$$\frac{8}{11} \times \frac{4}{4} = \frac{32}{44}$$

$$\frac{8}{11} \times \frac{5}{5} = \frac{40}{55}$$

$$\therefore \frac{8}{11} = \frac{16}{32} = \frac{24}{33} = \frac{32}{44} = \frac{40}{55}$$

c. $\frac{7}{15} \times \frac{2}{2} = \frac{14}{30}$

$$\frac{7}{15} \times \frac{3}{3} = \frac{21}{45}$$

$$\frac{7}{15} \times \frac{4}{4} = \frac{28}{60}$$

$$\frac{7}{15} \times \frac{5}{5} = \frac{35}{75}$$

$$\therefore \frac{7}{15} = \frac{14}{30} = \frac{21}{45} = \frac{28}{60} = \frac{35}{75}$$

d. $\frac{4}{15} \times \frac{2}{2} = \frac{8}{30}$

$$\frac{4}{15} \times \frac{3}{3} = \frac{12}{45}$$

$$\frac{4}{15} \times \frac{4}{4} = \frac{16}{60}$$

$$\therefore \frac{4}{15} = \frac{8}{30} = \frac{12}{45} = \frac{16}{60}$$

3. a. $\frac{3}{4} \times \frac{8}{8} = \frac{24}{32}$ b. $\frac{7}{8} \times \frac{4}{4} = \frac{28}{32}$ c. $\frac{5}{16} \times \frac{2}{2} = \frac{10}{32}$

d. $\frac{10}{13} \times \frac{3}{3} = \frac{30}{39}$ e. $\frac{5}{12} \times \frac{6}{6} = \frac{30}{72}$ f. $\frac{3}{11} \times \frac{10}{10} = \frac{30}{110}$

4. a. $\frac{12}{17} \times \frac{7}{7} = \frac{84}{119}$ b. $\frac{104}{144} = \frac{13}{18} \times \frac{8}{8}$ c. $\frac{6}{17} \times \frac{6}{6} = \frac{36}{102}$

5. a. $\frac{\cancel{32}^{\cancel{16}\ \cancel{8}\ \cancel{4}\ 2}}{\cancel{80}^{\cancel{40}\ \cancel{20}\ \cancel{10}\ 5}} = \frac{2}{5}$

b. $\frac{\cancel{35}^{7}}{\cancel{50}_{10}} = \frac{7}{10}$

c. $\frac{\cancel{25}^{5}}{\cancel{30}_{6}} = \frac{5}{6}$

d. $\frac{\cancel{48}^{\cancel{24}^{\cancel{12}^{1}}}}{\cancel{144}_{\cancel{72}_{\cancel{36}_{3}}}} = \frac{1}{3}$

e. $\frac{\cancel{36}^{12}}{\cancel{81}_{27}} = \frac{12}{27} = \frac{4}{9}$

f. $\frac{\cancel{75}^{\cancel{15}^{3}}}{\cancel{175}_{\cancel{35}_{7}}} = \frac{3}{7}$

g. $\frac{\cancel{26}^{\cancel{13}^{1}}}{\cancel{104}_{\cancel{52}_{4}}} = \frac{1}{4}$

h. $\frac{\cancel{66}^{\cancel{33}^{3}}}{\cancel{88}_{\cancel{44}_{4}}} = \frac{3}{4}$

4.3

1. a. $\frac{3}{8}$ and $\frac{4}{7}$

LCM of 8 and 7 = 56

$\frac{3}{8} \times \frac{7}{7} = \frac{21}{56}$

$\frac{4}{7} \times \frac{8}{8} = \frac{32}{56}$

$\frac{21}{56} < \frac{32}{56}$

$\frac{3}{8} < \frac{4}{7}$

b. $\frac{9}{13} > \frac{6}{13}$

c. $\frac{6}{8}$ and $\frac{7}{20}$

LCM of 8 and 20 = 2 × 2 × 2 × 5 = 40

d. $\frac{4}{5} > \frac{2}{5}$

$\frac{6}{8} \times \frac{5}{5} = \frac{30}{40}$

$\frac{7}{20} \times \frac{2}{2} = \frac{14}{40}$

$\frac{6}{8} > \frac{7}{20}$

e. $\frac{4}{9}$ and $\frac{3}{12}$

LCM of 9 and 12 = 36

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

$\frac{3}{12} \times \frac{3}{3} = \frac{9}{36}$

$\frac{16}{36} > \frac{9}{36}$

f. $\frac{8}{16}$ and $\frac{7}{30}$

LCM of 16 and 30 = 2 × 8 × 15 = 240

$\frac{8}{16} \times \frac{15}{15} = \frac{120}{240}$

$\frac{7}{30} \times \frac{8}{8} = \frac{56}{240}$

$\frac{120}{240} > \frac{56}{240}$

$\therefore \frac{8}{16} > \frac{7}{30}$

g. $\frac{5}{19} < \frac{6}{19}$

h. $\frac{3}{7} < \frac{4}{7}$

2 a. $\frac{3}{8}$ or $\frac{4}{7}$

LCM of 8 and 7 = 56

$\frac{3}{8} \times \frac{7}{7} = \frac{21}{56}$

$\frac{4}{7} \times \frac{8}{8} = \frac{32}{56}$

$\therefore \frac{21}{56} < \frac{32}{56}$

Hence $\frac{3}{8} < \frac{4}{7}$

b. $\frac{3}{4}$ or $\frac{9}{10}$

LCM of 4 and 10 = 20

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

$\frac{9}{10} \times \frac{2}{2} = \frac{18}{20}$

$\therefore \frac{15}{20} < \frac{18}{20}$

Hence $\frac{3}{4} < \frac{9}{10}$

c. $\frac{8}{11}$ or $\frac{3}{44}$

LCM of 4 and 10 = 20

$\frac{8}{11} \times \frac{4}{4} = \frac{32}{44}$

$\frac{3}{44} \times \frac{1}{1} = \frac{3}{44}$

$\therefore \frac{32}{44} > \frac{3}{44}$

Hence $\frac{8}{11} > \frac{3}{44}$

d. $\frac{9}{12}$ or $\frac{8}{42}$

LCM of 12 and 42

2	12, 42
3	6, 21
2	2, 7
7	1, 7
	1, 1

$= 2 \times 3 \times 2 \times 7 = 84$

$\frac{9}{12} \times \frac{7}{7} = \frac{63}{84}$

$\frac{8}{42} \times \frac{2}{2} = \frac{16}{84}$

$\therefore \frac{63}{84} > \frac{16}{84}$

Hence $\frac{9}{12} > \frac{8}{42}$

3. Fraction of marks obtained by Rinku $= \frac{160}{200}$

Fraction of marks obtained by Nisha $= \frac{90}{100}$

LCM of 100 and 200

100	100, 200
2	1, 2
	1, 1

$= 100 \times 2 = 200$

$\frac{160}{200} \times \frac{1}{1} = \frac{160}{200}$

$\frac{90}{100} \times \frac{2}{2} = \frac{180}{200}$

$\therefore \frac{160}{200} < \frac{180}{200}$

$\frac{160}{200} < \frac{90}{100}$

Hence Nisha obtained more marks than Rinku

4. Team A got $= \frac{16}{20}$

Team B got $= \frac{20}{30}$

LCM of 20 and 30

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

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

$\frac{16}{20} \times \frac{3}{3} = \frac{48}{60}$

$\frac{20}{30} \times \frac{2}{2} = \frac{40}{60}$

$\therefore \frac{48}{60} > \frac{40}{60}$

$\frac{16}{20} > \frac{20}{30}$

Hence Team A got large share.

4.4

1. a. $\frac{5}{\cancel{12}_{3}} \times \frac{\cancel{4}^{2}}{\cancel{8}} = \frac{10}{3}$ b. $\frac{6}{\cancel{15}_{5}} \times \frac{1}{\cancel{3}} = \frac{6}{5}$

c. $\frac{31}{\cancel{57}_{3}} \times \overset{1}{\cancel{19}} = \frac{31}{3}$

d. $\frac{3}{\cancel{11}_{1}} \times \overset{3}{\cancel{33}} = 9$

e. $\frac{10}{\cancel{17}} \times \overset{3}{\cancel{51}} = 30$

f. $\frac{\overset{1}{\cancel{3}}}{\cancel{18}_{\cancel{9}_{3}}} \times \overset{5}{\cancel{10}} = \frac{5}{3}$

2. a. $\frac{7}{\cancel{30}} \times \overset{1}{\cancel{70}} = \frac{49}{3}$

b. $3\frac{1}{6} \times \frac{3}{28}$

$\frac{\overset{1}{\cancel{19}}}{\cancel{6}_{2}} \times \frac{\overset{1}{\cancel{3}}}{\cancel{28}_{2}} = \frac{1}{4}$

c. $\frac{\overset{4}{\cancel{32}}}{\cancel{80}} \times \cancel{50} = 20$

d. $3\frac{2}{7} \times \frac{7}{46}$

$\frac{\overset{1}{\cancel{23}}}{\cancel{7}} \times \frac{\overset{1}{\cancel{7}}}{\cancel{46}_{2}} = \frac{1}{2}$

e. $4\frac{1}{5} \times \frac{2}{63}$

$\frac{\overset{1}{\cancel{21}}}{5} \times \frac{2}{\cancel{63}_{3}} = \frac{2}{15}$

f. $\frac{\overset{1}{\cancel{6}}}{\cancel{9}} \times \frac{\overset{3}{\cancel{27}}}{\cancel{42}_{7}} = \frac{3}{7}$

4.5

1. a. $\frac{1}{7}$ of 63

$\frac{1}{\cancel{7}} \times \overset{9}{\cancel{63}} = 9$

b. $\frac{1}{2}$ of 50

$\frac{1}{\cancel{2}} \times \overset{25}{\cancel{50}} = 25$

c. $\frac{4}{\cancel{12}} \times \overset{11}{\cancel{132}} = 44$

d. $\frac{5}{\cancel{13}} \times \overset{5}{\cancel{65}} = 25$

e. $\frac{3}{\cancel{15}} \times \overset{40}{\cancel{600}} = 120$

f. $\frac{5}{\cancel{6}} \times \overset{41}{\cancel{246}} = 205$

2. a. $3\frac{1}{8}$ of ₹ 400

$\frac{25}{\cancel{8}} \times \overset{50}{\cancel{400}} =$ ₹ 1250

b. $\frac{3}{7}$ of 5600 *l*

$\frac{3}{\cancel{7}} \times \overset{800}{\cancel{5600}} = 2400\ l$

c. $\frac{4}{6}$ of 300 kg

$\frac{4}{\cancel{6}} \times \overset{50}{\cancel{300}} = 200$ kg

d. $\frac{8}{13}$ of ₹ 10400

$\frac{8}{\cancel{13}} \times \overset{800}{\cancel{10400}} =$ ₹ 6400

4.6

1. $\frac{7}{9} \times \frac{7}{11} = \frac{49}{99}$

2. $\frac{\overset{1}{\cancel{5}}}{\underset{4}{\cancel{16}}} \times \frac{\overset{1}{\cancel{4}}}{\underset{3}{\cancel{15}}} = \frac{1}{12}$

3. $\frac{11}{13} \times \frac{3}{7} = \frac{33}{91}$

4. $\frac{1}{8} \times \frac{1}{9} = \frac{1}{72}$

5. $3\frac{1}{2} \times \frac{3}{7} = \frac{\cancel{7}}{2} \times \frac{3}{\cancel{7}} = \frac{3}{2}$

6. $\frac{\overset{5}{\cancel{25}}}{\underset{2}{\cancel{34}}} \times \frac{\overset{1}{\cancel{17}}}{\underset{9}{\cancel{45}}} = \frac{5}{18}$

7. $\frac{\overset{1}{\cancel{2}}}{\underset{1}{\cancel{17}}} \times \frac{\overset{1}{\cancel{17}}}{\underset{7}{\cancel{14}}} = \frac{1}{7}$

8. $\frac{\overset{1}{\cancel{3}}\cancel{24}}{\underset{3}{\cancel{9}}\cancel{45}} \times \frac{\overset{1}{\cancel{5}}}{\underset{1}{\cancel{8}}} = \frac{1}{3}$

9. $\frac{\overset{1}{\cancel{21}}}{\underset{1}{\cancel{80}}} \times \frac{\overset{\cancel{7}}{\cancel{56}}}{\underset{\cancel{7}}{\cancel{147}}} = \frac{1}{10}$

4.7

1. a. $\frac{3}{8} \div 3 = \frac{\cancel{3}}{8} \times \frac{1}{\cancel{3}} = \frac{1}{8}$

b. $\frac{3}{2} \div 8 = \frac{3}{2} \times \frac{1}{8} = \frac{3}{16}$

c. $8\frac{1}{9} \div 9 = \frac{73}{9} \times \frac{1}{9} = \frac{73}{81}$

d. $\frac{5}{12} \div \frac{3}{4} = \frac{5}{\underset{3}{\cancel{12}}} \times \frac{\overset{1}{\cancel{4}}}{3} = \frac{5}{9}$

e. $2\frac{1}{7} \div \frac{8}{7} = \frac{15}{\underset{1}{\cancel{7}}} \times \frac{\overset{1}{\cancel{7}}}{8} = \frac{15}{8}$

f. $11\frac{1}{4} \div \frac{10}{9} = \frac{\overset{9}{\cancel{45}}}{4} \times \frac{9}{\underset{2}{\cancel{10}}} = \frac{81}{8}$

g. $\frac{9}{15} \div \frac{1}{5} = \frac{\overset{3}{\cancel{9}}}{\underset{1}{\cancel{15}}} \times \frac{\overset{1}{\cancel{5}}}{1} = 3$

h. $18\frac{1}{3} \div \frac{5}{2} = \frac{\overset{11}{\cancel{55}}}{3} \times \frac{2}{\underset{1}{\cancel{5}}} = \frac{22}{3}$

i. $6 \div \frac{6}{15} = \cancel{6} \times \frac{15}{\underset{1}{\cancel{6}}} = 15$

2. a. $\frac{9}{4} \div \frac{16}{7} = \frac{9}{4} \times \frac{7}{16} = \frac{63}{64}$

b. $\frac{5}{6} \div 30 = \frac{\cancel{5}^{1}}{6} \times \frac{1}{\cancel{30}_{6}} = \frac{1}{36}$

c. $\frac{7}{24} \div \frac{1}{18} = \frac{7}{\cancel{24}_{\cancel{8}_{4}}} \times \frac{\cancel{18}^{\cancel{6}^{3}}}{1} = \frac{21}{4}$

d. $9\frac{1}{4} \div 1\frac{4}{5} = \frac{37}{4} \div \frac{9}{5} = \frac{37}{4} \times \frac{5}{9} = \frac{185}{36}$

e. $4\frac{1}{3} \div 12\frac{2}{3} = \frac{13}{3} \div \frac{38}{3} = \frac{13}{\cancel{3}} \times \frac{\cancel{3}}{38} = \frac{13}{38}$

f. $10\frac{1}{3} \div 1\frac{13}{33} = \frac{31}{3} \div \frac{46}{33} = \frac{31}{\cancel{3}} \times \frac{\cancel{33}^{11}}{46} = \frac{341}{46}$

3. a. 8 b. $\frac{5}{2}$ c. $\frac{16}{7}$ d. $\frac{1}{17}$

e. 0 f. 1

g. $3\frac{5}{14} = \frac{47}{14}$ Multiplicative inverse of $\frac{47}{14}$ is $\frac{14}{47}$

h. $6\frac{5}{8} = \frac{53}{8}$ Multiplicative inverse of $\frac{53}{8}$ is $\frac{8}{53}$

4.8

1. Cost of $4\frac{1}{6}$ kg mangoes = ₹ 600

Cost of 1 kg of mango $= 600 \div 4\frac{1}{6}$ kg

$= 600 \div \frac{25}{6} = \frac{\cancel{600}^{\cancel{120}^{24}}}{\cancel{25}_{\cancel{5}_{1}}} \times \frac{6}{} = ₹ 144$

2. Total length of wire $= 14\frac{1}{2}$ m $= \frac{29}{2}$ m

No. of pieces = 10

Length of each piece $= \frac{29}{2} \div 10$

$= \frac{29}{2} \times \frac{1}{10} = \frac{29}{20}$ m $= 1\frac{9}{20}$ m

3. Length of piece of wire $= \frac{3}{4}$ m

Total length of 20 pieces of wire $= \frac{3}{\cancel{4}} \times \overset{5}{\cancel{20}} = 15$ m

4. Weight of each box $= 2\frac{3}{6}$ kg

No. of boxes of satefy pin in one carton $= 30$

Total weight of carton $= 2\frac{3}{6} \times 30$

$= \frac{15}{\cancel{6}} \times \overset{5}{\cancel{30}} = 75$ kg

5. Quantity of oil in 16 tins $= 178\frac{1}{2}\ l$

Quantity of oil in 1 tin $= 178\frac{1}{2} \div 16$

Total weight of carton $= \frac{357}{2} \div 16$

$= \frac{357}{2} \times \frac{1}{16} = 11\frac{5}{32}$

6. Product of 2 fractions $= 5$

One of the number $= 13\frac{4}{7}$

Other number $= 15 \div 13\frac{4}{7}$

$= 15 \div \frac{95}{7}$

$= \overset{1}{\cancel{5}} \times \frac{7}{\underset{19}{\cancel{95}}} = \frac{7}{19}$

7. Distance travelled in $4\frac{2}{3}$ hrs $= 283\frac{1}{2}$ km

Distance travelled in 1 hr $= 283\frac{1}{2} \div 4\frac{2}{3}$

Other number $= \frac{567}{2} \div \frac{14}{3}$

$= \frac{\overset{81}{\cancel{567}}}{2} \times \frac{3}{\cancel{14}}$

$= \frac{243}{4} = 60\frac{3}{4}$ km

$$
\begin{array}{r|l}
4 & 2\ 4\ 3 \\
 & 2\ 4\ \downarrow \\
\hline
 & 0\ 3 \\
 & -\ 0 \\
\hline
 & \quad 3
\end{array}
\quad 60
$$

8. Area of rectangle $= 37\frac{4}{5}$ sq. cm

Length of rectangle $= 6\frac{3}{4}$ cm

Breadth of rectangle $= 37\frac{4}{5} \div 6\frac{3}{4}$

$= \frac{189}{5} \div \frac{27}{4}$

$= \frac{\overset{7}{\cancel{189}}}{5} \times \frac{4}{\underset{1}{\cancel{27}_{9}}} = \frac{28}{5}$ m

9. Total length of cloth $= 36\frac{1}{8}$ m

No. of piece $= 17$

Length of each piece $= 36\frac{1}{8} \div 17$

$= \frac{\overset{17}{\cancel{289}}}{8} \times \frac{1}{\underset{1}{\cancel{17}}} = \frac{17}{8}$ m

Revision

1. b. $5\frac{1}{2} = \frac{11}{2}$

Reciprocal $= \frac{2}{11}$

2. a. $7\frac{1}{5} \div 1\frac{1}{35}$

$= \frac{36}{5} \div \frac{36}{35} = \frac{\cancel{36}}{\underset{1}{\cancel{5}}} \times \frac{\overset{7}{\cancel{35}}}{\cancel{36}} = 7$

3. a. $\frac{2}{3}$ of $\frac{5}{6} = \frac{\cancel{2}}{3} \times \frac{5}{\underset{3}{\cancel{6}}} = \frac{5}{9}$

4. Reciprocal of 8 is $\frac{1}{8}$

a. Reciprocal of $\frac{1}{6}$ is 6

Sum = $\frac{1}{8} + 6 = \frac{1+48}{8} = \frac{49}{8} = 6\frac{1}{8}$

5. b. $200 = 80 \times 5$

6. b. $\frac{1}{3}$ of $5\frac{1}{2}$ m

$= \frac{1}{3} \times \frac{11}{2} = \frac{11}{6}$ m $= 1\frac{5}{6}$ m

7. b. $30 \times 3\frac{3}{5}\ l$

$= \overset{6}{\cancel{30}} \times \frac{18}{\cancel{5}_{1}} = 108\ l$

5.1

1. a. i. $\frac{75}{10} = 7.5$ b. ii $\frac{23}{100} = 0.23$ c. i. Tenths d. i. $0.97 = \frac{97}{100}$

2. a. $\frac{3}{100} = 0.03$ b. $\frac{73}{100} = 0.73$ c. $\frac{8}{1000} = 0.008$ d. $\frac{8}{100} = 0.08$

e. $\frac{108}{100} = 1.08$ f. $\frac{42}{1000} = 0.042$ g. $\frac{99}{100} = 0.99$ h. $\frac{6002}{100} = 60.02$

5.2

1. a. iii) $\frac{6}{100} = 0.06$ b. i) $\frac{40}{100} = 0.40$ c. ii) $18.016 = 18$

2. a. 362.029 = 3 hundreds + 6 tens + 2 ones + 2 hundredths + 9 thousandth

$= 300 + 60 + 2 + 0 + \frac{2}{10} + \frac{9}{100}$

b. 503.316 = 5 hundreds + 3 ones + 3 tenths + 1 hundredths + 6 thousandths

$= 500 + 3 + \frac{3}{10} + \frac{1}{100} + \frac{6}{1000}$

c. 107.253 = 1 hundreds + 7 ones + 2 tenths + 5 hundredths + 3 thousandths

$= 100 + 7 + \frac{2}{10} + \frac{5}{100} + \frac{3}{1000}$

d. 159.350 = 1 hundreds + 5 tens + 9 ones + 3 tenths + 5 hundredths + 0 thousandth

$= 100 + 50 + 9 + \frac{3}{10} + \frac{5}{100}$

e. 24.405 = 2 tens + 4 ones + 4 tenths + 5 thousandths

$= 20 + 4 + \frac{4}{10} + \frac{5}{1000}$

f. 853.062 $= 800 + 50 + 3 + \frac{6}{100} + \frac{2}{1000}$

= 8 hundreds + 5 tens + 3 ones + 6 hundredths + 2 thousandths

g. 92.706 = 9 tens + 2 ones + 7 tenths + 6 thousandths

$= 90 + 2 + \frac{7}{10} + \frac{6}{1000}$

h. 500.607 = 5 hundred + 6 tenths + 7 thousandths

$= 500 + \frac{6}{10} + \frac{7}{1000}$

3. a. tenths b. tenths c. hundredths d. thousandth e. tens
4. a. 5.346 b. 929.738 c. 983.407 d. 8065.216
   e. 2.073 f. 605.061

5.3

1. a. Like decimals are b, e, f, g.
2. a. 0.106, 0.400, 3.050, 0.080
   b. 6.720, 6.271, 6.200, 0.004
   c. 94. 375, 301.416, 7.800, 4.610
   d. 2.800, 41.729, 17.860, 5.110
   e. 206.30, 55.28, 68.03, 75.90
   f. 144.860, 67.087, 3.070, 41.200

5.4

1. a. 0.57 < 0.67 b. 752.810 > 742.801 c. 102.60 < 102.62
   d. 91.780 > 91.708 e. 5.820 = 5.820 f. 136.60 > 135.82
   g. 0.01 < 0.10 h. 41.630 > 41.529 i. 51.123 = 51.123
2. a. 1.02, 2.021, 2.120, 7.201 b. 0.031, 0.055, 0.502, 0.516
   c. 0.006, 0.06, 0.6, 6 d. 9.014, 9.204, 9.240, 9.402
3. a. 555.1, 55.51, 5.551, 0.555 b. 6.601, 6.160, 6.061, 6.013
   c. 535, 353.5, 353, 35.35 d. 4.1, 4.01, 4.001, 4

5.5

1. a. i. 1.25 + 1.25 = 2.50

   b.
   $$\begin{array}{r} 32.28 \\ -\ 8.14 \\ \hline 24.14 \end{array}$$

   c.
   $$\begin{array}{r} 6.53 \\ -\ 0.10 \\ \hline 6.43 \end{array}$$

   d.
   $$\begin{array}{r} 10.25 \\ +100.35 \\ \hline 110.60 \end{array}$$

2. a.
   $$\begin{array}{r} 0.9 \\ +\ 0.1 \\ \hline 1.0 \end{array}$$

   b.
   $$\begin{array}{r} 0.8 \\ +\ 0.9 \\ \hline 1.7 \end{array}$$

   c.
   $$\begin{array}{r} {\scriptstyle 2\ 10\ 12\ \ 0\ 10} \\ \cancel{3}\,\cancel{1}\,\cancel{2}.\,\cancel{1}\,\cancel{0}\,1 \\ -\ 66.050 \\ \hline 246.051 \end{array}$$

   d.
   $$\begin{array}{r} {\scriptstyle (1)(1)} \\ 99.909 \\ {\scriptstyle (1)} \\ +888.500 \\ \hline 988.409 \end{array}$$

   e.
   $$\begin{array}{r} 0.10 \\ +\ 1.11 \\ \hline 1.21 \end{array}$$

   f.
   $$\begin{array}{r} {\scriptstyle 4\ 11\ \ \ \ 0\ 12} \\ 7\,\cancel{3}\,\cancel{1}5.\,\cancel{1}\,\cancel{2}5 \\ -\ 325.090 \\ \hline 7190.035 \end{array}$$

   g.
   $$\begin{array}{r} {\scriptstyle (1)} \\ 6219.00 \\ +\ 752.90 \\ \hline 6971.90 \end{array} \qquad \begin{array}{r} 6971.900 \\ -\ 8.206 \\ \hline 6963.694 \end{array}$$

   h.
   $$\begin{array}{r} {\scriptstyle (1)} \\ 0.280 \\ +\ 0.083 \\ \hline 0.363 \end{array}$$

   i.
   $$\begin{array}{r} 0.66 \\ -\ 0.34 \\ \hline 0.32 \end{array}$$

   j.
   $$\begin{array}{r} 31.001 \\ 13.010 \\ +131.100 \\ \hline 175.111 \end{array}$$

   k.
   $$\begin{array}{r} {\scriptstyle 7\ \ 10\ 9\ 10} \\ \cancel{8}.\,\cancel{1}\,\cancel{0}\,\cancel{0} \\ -\ 2.921 \\ \hline 5.179 \end{array}$$

   l.
   $$\begin{array}{r} {\scriptstyle 2\ 9\ 9\ 9\ \ \ 10} \\ \cancel{3}\,\cancel{0}\,\cancel{0}\,\cancel{0}.\,\cancel{0}\,01 \\ -\ 2206.600 \\ \hline 0793.401 \end{array}$$

3. a. 5.9 b. 0 c. 31.05 d. 15.06 e. 3.45

5.6

1. a. ii) 8.5 × 100 = 850 b. ii) 980.5 c. i) 60

2. a.
   $$\begin{array}{r} 1.001 \\ \times\ 96 \\ \hline 6006 \\ +90090 \\ \hline 96.096 \end{array}$$

   b.
   $$\begin{array}{r} 8.24 \\ \times\ 19.7 \\ \hline 5768 \\ 74160 \\ +82400 \\ \hline 162.328 \end{array}$$

c.
$$\begin{array}{r} 3.1 \\ \times 0.04 \\ \hline 124 \\ +000 \\ \hline 0.124 \end{array}$$

d.
$$\begin{array}{r} 10.05 \\ \times 0.6 \\ \hline 06030 \\ 00000 \\ \hline 06.030 \end{array}$$

e.
$$\begin{array}{r} 0.052 \\ \times 3.2 \\ \hline 00104 \\ +01560 \\ \hline 0.1664 \end{array}$$

f.
$$\begin{array}{r} 5.982 \\ \times 0.059 \\ \hline 53838 \\ +299100 \\ 0000000 \\ \hline 0000000 \\ \hline 0.352938 \end{array}$$

g.
$$\begin{array}{r} 92.015 \\ \times 88 \\ \hline 736120 \\ +7361200 \\ \hline 8097.320 \end{array}$$

h.
$$\begin{array}{r} 5.982 \\ \times 0.178 \\ \hline 47856 \\ 41874\,0 \\ +598200 \\ \hline 1.064796 \end{array}$$

3. a. $0.9 \times 10 = 9$ b. $0.018 \times 1000 = 18$ c. $0.320 \times 100 = 32$
   d. $1.5 \times 100 = 150$ e. $9.009 \times 1000 = 9009$ f. $1.358 \times 10 = 13.58$
   g. $18.25 \times 100 = 1825$ h. $1.18 \times 10 = 11.8$
   i. $51.821 \times 1000 = 51821$ j. $7.008 \times 1000 = 7008$
   k. $0.1 \times 100 = 10.0$ l. $79.32 \times 10 = 793.2$
4. a. 23.35 b. 0 c. 6 d. 1.6

5.7

1. a. iii) $0.4 + 0.3 = 0.7$ b. iv) $2.83 - 0 = 2.83$ c. ii) $7 \times 0 = 0$
2. a. $\frac{7}{8}$

$$\begin{array}{r} 8\overline{)7000}\,(0.875 \\ -64\downarrow \\ \hline 60 \\ -56\downarrow \\ \hline 40 \\ -40 \\ \hline 0 \end{array}$$

$= 0.875$

b. $\frac{12}{15}$

$$15\overline{)1\,2\,0}\,0.8$$
$$\underline{1\,2\,0}$$
$$0$$

$= 0.8$

c. $5\frac{1}{5} = \frac{26}{5}$

$$5\overline{)2\,6.0}\,5.2$$
$$\underline{2\,5\downarrow}$$
$$1\,0$$
$$\underline{-\,1\,0}$$
$$0$$

$= 5.2$

d. $9\frac{1}{9} = \frac{82}{9}$

$$9\overline{)8\,2.0\,0}\,9.11$$
$$\underline{8\,1\downarrow}$$
$$1\,0$$
$$\underline{-\;\;9\downarrow}$$
$$1\,0$$
$$\underline{-\;9}$$
$$1$$

$= 9.11$

3. a. $4.9 \div 7$

$\frac{49}{10} \div 7$

$\frac{\overset{7}{\cancel{49}}}{10} \times \frac{1}{\cancel{7}} = \frac{7}{10} = 0.7$

b. $31.5 \div 9$

$\frac{\overset{35}{\cancel{315}}}{10} \times \frac{1}{\cancel{9}} = \frac{35}{10} = 3.5$

c. $57.5 \div 5$

$\frac{\overset{115}{\cancel{575}}}{10} \times \frac{1}{\cancel{5}} = \frac{115}{10} = 11.5$

d. $0.077 \div 7$

$\frac{\overset{11}{0.\cancel{077}}}{1000} \times \frac{1}{\cancel{7}} = \frac{11}{1000} = 0.011$

e. $0.95 \div 5$

$\frac{\overset{19}{\cancel{95}}}{100} \times \frac{1}{\cancel{5}} = \frac{19}{100} = 0.19$

f. $16.5 \div 15$

$$\frac{\overset{11}{\cancel{16.5}}}{10} \times \frac{1}{\cancel{15}} = \frac{11}{10} = 1.1$$

4. a. $1.3 \div 10$

$$\frac{1.3}{10} \times \frac{1}{10} = 0.13$$

b. $\frac{4481}{100} \times \frac{1}{1000} = \frac{4481}{100000} = 0.04481$

c. $\frac{1085}{10} \times \frac{1}{10} = \frac{1085}{100} = 10.85$

d. $\frac{2798}{100} \times \frac{1}{100} = \frac{2798}{10000} = 0.2798$

e. $\frac{90813}{100} \times \frac{1}{1000} = \frac{90813}{10000} = 0.90813$

f. $\frac{332}{10} \times \frac{1}{1000} = \frac{332}{10000} = 0.0332$

5. a. $4.5 \div 0.9$

$$\frac{45}{10} \div \frac{9}{10}$$

$$\frac{\overset{5}{\cancel{45}}}{\cancel{10}} \times \frac{\cancel{10}}{\cancel{9}} = 5$$

b. $5.4 \div 0.6$

$$\frac{54}{10} \div \frac{6}{10}$$

$$\frac{\overset{9}{\cancel{54}}}{\cancel{10}} \times \frac{\cancel{10}}{\cancel{6}} = 9$$

c. $8.5 \div 1.7$

$$\frac{85}{10} \div \frac{17}{10}$$

$$\frac{\overset{5}{\cancel{85}}}{\cancel{10}} \times \frac{\cancel{10}}{\cancel{17}} = 5$$

d. $3.6 \div 0.9$

$$\frac{36}{10} \div \frac{9}{10}$$

$$\frac{\overset{4}{\cancel{36}}}{\cancel{10}} \times \frac{\cancel{10}}{\cancel{9}} = 4$$

e. $5.6 \div 1.4$

$$\frac{56}{10} \div \frac{14}{10}$$

$$\frac{\overset{4}{\cancel{56}}}{\cancel{10}} \times \frac{\cancel{10}}{\cancel{14}} = 4$$

f. $1.69 \div 13$

$$\frac{169}{100} \div \frac{13}{1}$$

$$\frac{\overset{13}{\cancel{169}}}{\cancel{100}} \times \frac{\cancel{1}}{\cancel{13}} = \frac{13}{100} = 0.13$$

6. a. $8 \div 0.2$

$$8 \div \frac{2}{10}$$

$$\cancel{8}^{4} \times \frac{10}{\cancel{2}} = 40$$

b. $100 \div 2.5$

$$100 \div \frac{25}{10}$$

$$\overset{4}{\cancel{100}} \times \frac{10}{\cancel{25}} = 40$$

c. $3622 \div 45.275$

$$3622 \times \frac{1000}{45275} = \frac{144880}{1811} = 80$$

d. $41 \div 0.5$

$$41 \div \frac{5}{10}$$

$$41 \times \frac{10}{5} = \frac{410}{5} = 82$$

e. $250 \div 2.5$

$$250 \div \frac{25}{10}$$

$$\overset{10}{\cancel{250}} \times \frac{10}{\cancel{25}} = 100$$

f. $81 \div 0.27$

$$81 \div \frac{27}{100}$$

$$\overset{3}{\cancel{81}} \times \frac{100}{\cancel{27}_{3}} = 300$$

7. a. 7.85 b. 0 c. 1 d. 15.032 e. 0 f. 0

Revision

1. a) $\frac{18}{1000} = 0.018$ 2. e) 6.39 3. c) 4.804 4. a) 25.3 5. b) 23.247

6. b) $0.3 \times 0.3 \times 0.3$

$$\frac{3}{10} \times \frac{3}{10} \times \frac{3}{10} = \frac{27}{1000} = 0.027$$

7. d) $\frac{1}{0.04} = \frac{1 \times \overset{25}{\cancel{100}}}{004} = 25$

8. c) $\frac{0213}{1000} \div \frac{000213}{100000}$

$$\frac{\cancel{213}}{1\cancel{000}} \times \frac{100\cancel{000}}{\cancel{213}} = 100$$

9. $18 \div 1.2$

$$\overset{\overset{3}{\cancel{6}}}{\cancel{18}} \times \frac{\overset{5}{\cancel{10}}}{\underset{\underset{2}{\cancel{4}}}{\cancel{12}}} = 15$$

10. d. $3 \times 0.3 \times 0.03 \times 30$

$$3 \times \frac{3}{10} \times \frac{3}{10\cancel{0}} \times 3\cancel{0} = \frac{81}{100} = 0.81$$

11. $88 \div 0.08$

$$\overset{11}{\cancel{88}} \times \frac{100}{\cancel{8}} = 1100$$

12. 1.5×0.9

$$\frac{\overset{3}{\cancel{15}}}{\underset{2}{\cancel{10}}} \times \frac{9}{10} = \frac{27}{20} =$$

```
20 ) 2 7 .0 ( 1.35
     2 0 ↓
     ------
       7 0
     - 6 0
     ------
        10 0
      - 10 0
      ------
           0
      ------
```

$= 1.35$

6.1

1. a. 41 — 40 b. 578 — 580 c. 975 — 980
   d. 6232 — 6230 e. 70306 — 70310 f. 24898 — 24900
   g. 305413 — 305410 h. 108979 — 108980
2. a. 115 — 100 b. 691 — 700 c. 3650 — 3700
   d. 7134 — 7100 e. 25309 — 25300 f. 50768 — 50800
   g. 110111 — 110100 h. 278678 — 278700
3. a. 5367 — 5000 b. 6710 — 7000 c. 10492 — 10000
   d. 36505 — 37000 e. 718925 — 719000 f. 776396 — 776000
   g. 1035608 — 1036000 h. 2865299 — 2865000
4. a. 14670 — 10000 b. 15745 — 20000 c. 16892 — 20000
   d. 21987 — 20000 e. 447126 — 450000 f. 248259 — 250000
   g. 862789 — 860000 h. 3470358 — 3470000
5. a. 148900 — 100000 b. 247589 — 200000
   c. 761308 — 800000 d. 282615 — 300000
   e. 1054319 — 1100000 f. 9407685 — 9400000
   g. 36970354 — 3700000 h. 51352419 — 51400000
6. a. 1716423— 2000000 b. 8347917 — 8000000
   c. 6156902 — 6000000 d. 7719543 — 8000000
   e. 3532104 — 4000000 f. 16380547 — 16000000
   g. 46524179 — 47000000 h. 64036658 — 64000000
7. a. 52735013 — 50000000 b. 66008609 — 70000000
   c. 95632417 — 100000000 d. 20869785 — 20000000
   e. 43754876 — 40000000 f. 107342310 — 110000000
8. a. 46 to 49, 51 to 54 b. 236 to 239, 241 to 244
   c. 786 to 789, 791 to 794 d. 5046 to 5049, 5051 to 5054
9. a. 750 to 849 b. 1750 to 1849 c. 5250 to 5349 d. 90450 to 90549
10. a. 500 to 1499 b. 19500 to 20499 c. 66500 to 67499

6.2

1. a. 7.3 — 7.0 b. 6.7 — 7.0 c. 3.5 — 4.0 d. 36.8 — 37.0
   e. 15.64 — 16.0 f. 57.532 — 58.0 g. 10.05 — 10.0 h. 46.703 — 47.0
2. a. 6.74 — 6.70 b. 9.36 — 9.40 c. 7.65 — 7.70
   d. 10.347— 10.300 e. 54.829 — 54.800 f. 92.371 — 92.40
   g. 86.813 — 86.80 h. 302.382 — 302.40

3. a. 0.706 — 0.710 b. 7.238 — 7.240 c. 11.415 — 11.420
   d. 27.893— 27.890 e. 36.082 — 36.680 f. 57.8491 — 57.8500
   g. 63.1475 — 63.1500 h. 803.7651 — 803.770
4. a. 0.7894 — 0.7890 b. 58.4728 — 58.4730
   c. 6.7635 — 6.7640 d. 79.01472— 79.01500
   e. 32.40361 — 32.40400 f. 423.00416 — 423.00400
5. a.

```
9 ) 2 . 30 ( 0.255
  - 1  8↓
    ------
      50
    - 45
    ------
       50
     - 45
    ------
        5
```

∴Quotient(correctto2decimalplaces) = 0.26

Quotient = 0.25

b.

```
15 ) 16.46 ( 1.096
   - 15↓↓
   -------
     146
   - 145
   -------
       100
     -  90
   -------
        10
```

∴ Quotient (correct to 2 decimal places) = 1.100

Quotient = 1.096

c.

```
22 ) 8 . 28 3 ( 0.376
     6  6↓  |
     -------|
     1  68  |
   - 1  54↓ |
   ---------|
       143  |
     - 132  |
     -------|
        11  |
```

∴ Quotient (correct to 2 decimal places) = 0.380

Quotient = 0.376

d.

```
17 ) 3.70 ( 0.217
   - 34↓↓
   -------
      30
    - 17
    -----
     130
     119
     ---
      11
```

∴ Quotient (correct to 2 decimal places) = 0.220

Quotient = 0.217

e. $16\overline{)21.83}\,(1.364$

-16

58

-48

103

-96

070

-64

6

$\therefore$ Quotient (correct to 2 decimal places) = 1.360

Quotient = 1.364

f. $20\overline{)101.37}\,(5.06$

-101

137

-120

170

-160

10

$\therefore$ Quotient (correct to 2 decimal places) = 5.070

Quotient = 5.068

6. a. $11\overline{)50\,000}\,(1.4545$

-44

60

-55

50

-44

60

-55

5

$\therefore$ Quotient (correct to 3 decimal places) = 0.4550

Quotient = 1.4545

b. $13\overline{)50\,000}\,(0.3846$

-39

110

-104

60

-52

80

-78

2

Quotient = 0.3846

c.

```
15)13 0000(0.8666
  – 12 0
      1 0 0
     –9 0
        1 00
       – 90
         100
       –  90
          10
```

∴ Quotient (correct to 3 decimal places) = 0.8670

Quotient = 0.8666

d.

```
11)37 0000(3.3636
  – 33 0
      4 0
    –3 3
       7 0
    –  6 6
         4 0
       –3 3
          70
       –  66
           4
```

∴ Quotient (correct to 3 decimal places) = 3.3640

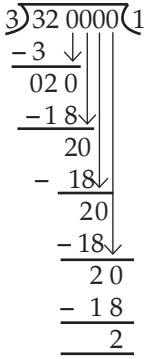
Quotient = 3.3636

e.

```
13)60 0000(.46153
  – 52
      8 0
    –7 8
       20
    –  13
        70
      – 65
         5 0
         3 9
         1 1
```

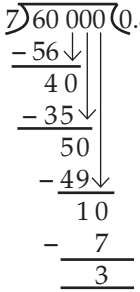
∴ Quotient (correct to 3 decimal places) = 46200

Quotient = .46153

f.


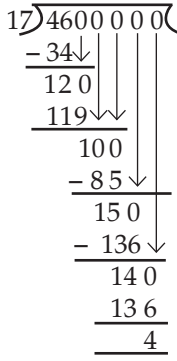
$\therefore$ Quotient (correct to 3 decimal places) = 1.6670

Quotient = 1.6666

g.


$\therefore$ Quotient (correct to 3 decimal places) = 0.8570

Quotient = 1.6666

h.


$\therefore$ Quotient (correct to 3 decimal places) = 2.70600

Quotient = 2.70588

Revision Chapter

1. c. 9949 — 9900 2. c. 10827 — 11000 3. b. 64510 — 65000
4. a. 5849678 — 5800000 5. c. 8650123 — 8700000

6. a. 19.53 — 19.50 7. c. 55.730 — 55.730 8. c. 80.415 — 80.420
9. b. 3.9635 — 3.9640

7.1

1. a. 13Km into m
   As 1km = 1000 m
   13km = 13 × 1000m
   = 13000m

   b. 13Kgm into g
   As 1kg = 1000 g
   13kg = 13 × 1000g
   = 13000g

   c. 13*l* into m*l*
   As 1*l* = 1000 m*l*
   13*l* = 13 × 1000m*l*
   = 13000m*l*

   d. 9.75 Km into m
   As 1km = 1000 m
   9Km + 75 m
   (9 × 1000) + 75
   9000 + 75 = 9075 m

   e. 17 km 24 m into m
   As 1km = 1000 m
   17 km + 24 m
   (17 × 1000) + 24
   17000 + 24 = 17024 m

   f. 9 kg 85 g into m
   As 1kg = 1000 g
   9 kg + 85 g
   (9 × 1000) + 85
   9000 + 85 = 9085 g

2. a. 9 km 5 hm 6 dam 4 m into m
   9 km = 9 × 1000 m = 9000 m
   5 hm = 5 × 100 m = 500 m
   6 dam = 6 × 10 m = 60 m
   4 m = 4 m
   = 9000 m + 500 m + 60 m + 4 m
   = 9564 m

   b. 3 km 8 hm 4 dam into m
   3 km = 3 × 1000 m = 3000 m
   8 hm = 8 × 100 m = 800 m
   4 dam = 4 × 10 m = 40 m
   = 3000 m + 800 m + 40 m
   = 3840 m

   c. 5.08 dag into g and dg
   5 × 10 g + 8 dg
   = 50 g 8 dg

   d. 6 km 6 hm into m
   6 km + 6 hm = 6 × 1000 + 6 × 100
   = 6000 m + 600 m = 6600 m

e. 4 hm 5 dam 6 m into m
$4 \times 100 + 5 \times 10 + 6$
$= 400 \text{ m} + 50 \text{ m} + 6 = 456 \text{ m}$

f. 5 dal 7 *l* into *l*
$50\ l + 7\ l = 57\ l$

3. a. 8 m into cm
$8 \times 100 \text{ cm} = 800 \text{ cm}$

b. 2.6 m into cm = 2 m 6 cm
$2 \times 100 + 6 \text{ cm} = 260 \text{ cm}$

c. 5.91 kg into dag
$5 \times 100 \text{ dag} + 91$
591 dag

d. 2.36 m into cm
$2 \times 100 \text{ cm} + 36 = 236 \text{ cm}$

e. 8 dam into cm
$8 \times 1000 \text{ cm} = 8000 \text{ cm}$

f. 3 *l* 360 m*l* into *l*
$1000 \text{ m} = \frac{1}{1000}\ l = 360 = \frac{360}{1000} = .360\ l + 3\ l = 3.360\ l$

4. a. 7 km into hm
1 km = 10 hm
$7 \times 10 \text{ hm} = 70 \text{ hm}$

b. 5.3 into dam
5 km + 3 dam
$5 \times 100 \text{ dam} = 503 \text{ dam}$

c. 7 kg 6 hg 9 dag into g
$7 \times 1000 + 6 \times 100 + 9 \times 10$
7000 g + 600 g + 90 g
7690 g

d. 4.63 km into dam
$4.63 \times 100 \text{ dam} = 463 \text{ dam}$

e. 2.5 dam into dm
$2.5 \times 100 \text{ dam} = 250 \text{ dm}$

f. 8 *l* 342 m*l* into m*l*
8×1000 m*l* + 342 m*l*
8000 m*l* + 342 m*l* = 8342 m*l*

5. a. 93.4 cm into mm
$93.4 \times 10 \text{ mm} = 934 \text{ mm}$

b. 5.1 g into mg
5.1×1000 mg = 5100 mg

c. 25 m*l* into *l*
$\frac{25}{1000}$ *l* = 0.025 *l*

d. 8.63 m into mm
8.63×1000 mm = 8630 mm

e. 5.428 m into dm
5.428×10 dm = 54.28 dm

f. 8.05 *l* into m*l*
8.05×1000 m*l* = 8050 m*l*

6. a. 3 kg 42 g into g
3000 g + 42 g = 3042 g

b. 9 m 6 cm into cm
9×100 cm + 6 cm
900 cm + 6 cm = 906 cm

c. 4.2 dag into dg
4.2×100 dg = 420 dg

d. 6 cm 6 mm into mm
60 mm + 6 mm = 66 mm

e. 4 m 4 cm into mm
400 cm + 4 cm = 404 cm

f. 2.8 k*l* into *l*
2.8×1000 *l* = 2800 *l*

7. a. 8.03 km into km and m
8 km 30 m

b. 15.4 hm into hm and dam
15 hm + 4 dam = 15 hm 4 dam

c. 7.5 hg into hg and dag
7.5×10 dag = 75 dag

d. 16.4 m into m and cm
16.4×100 cm = 1640 cm

7.2

1. a. 4 mm into cmmm
$\frac{4}{10}$ cm = 0.4 cm

b. 95 cm into m
$\frac{95}{100}$ cm = 0.95 m

c. 160 cm into m

$\frac{160}{100}$= 1.6 cm

d. 6 cm into m

$\frac{6}{100}$ = 0.06

e. 75 ml into l

$\frac{75}{1000}$ *l*= 0.075 *l*

f. 52 mg into g

$\frac{52}{1000}$ g = 0.052 g

2. a. 364 m into km

$\frac{364}{1000}$ km = 0.364 m

b. 4375 m into km

$\frac{4375}{1000}$ m = 4.375 km

c. 48 m into km

$\frac{48}{1000}$ km = 0.048 km

d. 120 *l* 8 m*l* into *l*

120 *l* $\frac{8}{1000}$ *l* = 120.008 *l*

e. 1200 g into kg

$\frac{1200}{1000}$ kg = 1.2 kg

f. 3064 mg into kg

$\frac{3064}{1000000}$ kg = 0.003064 kg

3. a. 8 cm 6 mm into cm

8 cm + $\frac{6}{10}$ cm = 8.6 cm

b. 26 cm 8 mm into cm

26 cm + $\frac{8}{10}$ cm = 26.8 cm

c. 12 *l* 6 m*l* into m*l*

12000 m*l* + 6 m*l* = 12006 m*l*

4 a. 6 m 65 cm into m

6 m + $\frac{65}{100}$ m = 6.65 m

b. 40 m 28 cm into m

40m + $\frac{28}{100}$ cm = 40.28 m

c. 8 m 5 cm into m

8 cm + $\frac{5}{100}$ cm = 8.05 cm

d. 60 g 6 cg into g

$60\text{ g} + \frac{6}{100}\text{ g} = 60.06\text{ g}$

e. 6125 *l* into k*l*

$\frac{6125}{1000}\ l = 6.125\text{ k}l$

f. 5000 mg into g

$\frac{5000}{1000}\text{ mg} = 5\text{ g}$

5. a. $1000\text{ m} = \frac{1}{1000}\ km$

$275\text{ m} = \frac{275}{1000}\ km$

$= .275 + 6 = 6.275\ km$

b. $1000\text{ m} = \frac{1}{1000}\ km$

$65\text{ m} = \frac{65}{1000}\ km$

$= .065 + 24 = 24.065\ km$

c. $1000\text{ l} = \frac{1}{1000}\ kl$

$10\ l = \frac{10}{1000}\ kl$

$= .010 + 46 = 46.010\ kl$

d. $100\text{ cm} = \frac{1}{100}\text{ m}$

$4\text{ cm} = \frac{4}{100}\text{ m}$

$= .04\text{ m} + 5 = 54\text{ m}$

$1000\text{ m} = \frac{1}{1000}\text{ km}$

$54\text{ m} = \frac{54}{1000}\text{ km}$

$= .054\text{ km} + 6 = 6.054\text{ km}$

e. $1000\ l = \frac{1}{1000}\ kl$

$6125\ l = \frac{6125}{1000}\ kl$

$= 6\ kl\ 125l$

f. $1000\ g = \frac{1}{1000}\ mg$

$5000\ g = \frac{5000}{1000}\ mg$

$= 5\ g$

6. a. 150 cm into hm

$\frac{150}{100000} = 0.015$ hm

b. 580 mg into g

$\frac{580}{1000} = 0.58$ g

c. 3000 m*l* into *l*

$\frac{3000}{1000} = 3\ l$

7. 6 dag 8 cg into g

$6 \times 10\ g + \frac{8}{100}\ g = 60.08\ g$

8. 12 hm 12 dm into m

$12 \times 100\ m + \frac{12}{10}\ m$

$1200 + 1.2$ m

1201.2 m

9. 7 km 9 cm 5 mm into m

$7000\ m + \frac{9}{100}\ m + \frac{5}{1000}\ m$

7000.095 m

7.3

1. a.

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

= 71 km 418 m

b.

	kl		*l*		
	2 ②	9	5 ①	6 ②	8
	7	4	0	3	9
+	4	8	0	0	6
1	5	1	6	1	3

= 151 k*l* 613 *l*

c.

	l		ml		
	8		0	0 ②	8
	7		0	0	7
+			6	4	5
1	5		6	6	0

= 15 *l* 660 m*l*

d.

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

= 93 km 62 m

e.

	km	m
	3 ① 2 ①	7 ① 6
	8	3 8
+		6 5
	4 1	7 9

= 41 km 79 m

f.

	g	mg
	9	0 0 ② 9
	6	0 0 6
+		0 7 7
	1 5	0 9 2

= 15 km 092 m

2. a.

	k*l*	h*l*
	~~1~~ ~~4~~ ⑬	~~0~~ ⑩
−	6	8
	7	2

= 7 k*l* 2 h*l*

b.

	kg	g
	~~2~~ ① ~~5~~ ⑭	~~0~~ ⑩ 8 5
−	1 8	6 7 5
	0 6	4 1 0

= 6 kg 410 g

c.

	km	m
	~~4~~ ③ ~~2~~ ⑪	~~0~~ ⑨ ⑫ 3 ~~2~~ ⑫
−	3 6	0 6 8
	0 5	9 6 4

= 5 km 964 m

d.

	km	m
	1 ~~6~~ ⑤	~~0~~ ⑨ ~~0~~ ⑨ ~~7~~ ⑰
−	1 0	0 0 9
	0 5	9 9 8

= 5 km 998 m

e.

	k*l*	*l*
	~~8~~ ⑦ ~~0~~ ⑨	~~0~~ ⑩ ~~8~~ ⑦ ~~0~~ ⑩
−	5 6	3 7 6
	2 3	7 0 4

= 23 k*l* 704 *l*

f.

	g	cg
	~~2~~ ~~3~~	~~1~~ ~~0~~
	(1) (12)	(10) (10)
–	1 4	2 8
	8	8 2

= 8 g 82 cg

3. Weight of each bag of wheat = 25 kg 650 g
Total weight of 8 wheat bags = 25 kg 650 g × 8

	kg	g
	~~2~~ ~~5~~	~~6~~ 5 0
	(4) (5)	(4)
		× 6
	2 0 5	2 0 0

Hence, total weight of such bags is 205 kg 200 g

4. Total weight of Riya and Jay = 73 kg 250 g
Weight of Riya = 38 kg 675 g
Weight of Jay = 73 kg 250 g – 38 kg 675 g

	kg	g
	7 3	2 5 0
–	3 8	6 7 5
	3 4	5 7 5

Hence, 34 kg 575 g is the weight of Jay.

5. Length of cloth needed for one frock = 4 m 20 cm
Length of cloth needed for 5 frock = 4 m 20 cm × 5

	m	cm
	4	2 0
		× 5
	2 1	0 0

Hence, 21 m cloth is needed for 5 frocks.

6. Distance covered in one hours = 3 km 675 m
Distance covered in 8 hours = 3 km 675 m × 8

	km	m
	3	6 7 5
		× 8
	2 9	4 0 0

Hence, 29 km 400 m distance will be covered in 8 hours.

7. Total length of rope = 34 m
No. of pieces = 10
Length of each small piece $= \frac{34}{10} = 3.4$ m
or 3 m 40 cm.

8. Distance covers in 6 hours = 255 km
Distance covers in 1 hours = 255 ÷ 6

$$
\begin{array}{r}
42.5 \\
6\overline{)\,2\;5\;5} \\
-\,2\;4\;\downarrow \\
\hline
\quad 1\;5 \\
-\,1\;2 \\
\hline
\quad\quad 3\;0 \\
-\,3\;0 \\
\hline
\quad\quad\quad 0
\end{array}
$$

Hence, speed of scooty is 42.5 km per hour.

9. Total capacity of bath tub = 60 *l*
Quantity of water in tub = 23 *l* 850 m*l*
Quantity of more water needed = 60 *l* – 23 *l* 850 m*l*

	kg		g		
	6	0	0	0	0
–	2	3	8	5	0
	3	6	1	5	0

Hence 36 *l* 150 m*l* of water is needed to fill the tub.

10. Capacity of one syrup bottle = 875 m*l*
No. of syrup bottles = 15
Capacity of 15 syrup bottles = 875 × 15

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

Hence, capacity of 15 syrup bottles is 13 *l* 125 m*l*

11. Quantity of milk = 8 *l* 275 m*l*
Quantity of water added = 1 *l* 725 m*l*
Total volume of the adulterated milk = 8 *l* 275 m*l* – 1 *l* 725 m*l*

	kg		g		
	8		2	7	5
−	1		7	2	5
	1	0	0	0	0

Hence, volume of adulterated milk is 10 *l*.

12. Height of A = 2.3 m or 2 m 30 cm
Height of B = 221 m or 2 m 21 cm
A is taller than B = 2 m 30 cm − 2 m 21 cm = 9 cm

Hence A is taller than B by 9 cm.

13. Breadth of book shelf = 45 m or 4500 cm
Breadth of one book = 5 cm
No. of books $= \frac{4500}{5} = 90$

Hence 90 books can fit in the shelf.

14. Weight of one badminton racket = 0.90 kg
Weight of 12 badminton rackets = 0.90 × 12

	0.	9	0	
	×	1	2	
	1	8	0	
+	0	9	0	0
	1	0.	8	0

Hence, weight of 12 badminton rackets is 10 kg 800 g.

15. Mass of one orange = 75 g
Total mass of oranges = 1.5 kg = 1500 g
No. of oranges $= \frac{1500}{75} = 20$

Hence, 20 oranges have 1.5 kg of mass

16. Total weight of salt = 4.5 kg or 4500 g
Weight of one packet of salt = 750 g
No. of packets $= \frac{4500}{750} = 6$

Hence, 6 packets make 4.5 kg of salt

17. Capacity of bucket = 1250 m*l*
Capacity of one bottle = 250 ml
No. of bottles $= \frac{1250}{250} = 5$
Hence, 5 bottles can be filled

18. Distance travelled by train = 26 km 300 m
Distance travelled by bus = 3 km 850 m
Total distance travelled = 26 km 300 m + 3 km 850 m

	km		m		
	2	6	3	0	0
+		3	8	5	0
	3	0	1	5	0

Hence, total distance travelled is 30 km 150 m

19. Length of rod = 3 m 65 cm
Length of piece cut = 85 cm
Remaining length of rod = 3 m 65 cm – 85 cm

	m		cm	
	3	6	5	
–		8	5	
	2	8	0	

Hence, remaining length of rod is 2 m 80 cm.

19. Total weight of apples = 3 kg 300 g
Apples given to his servant = 1 kg 650 g
Left over apples = 3 kg 300 g – 1 kg 650 g

	kg		g		
	3	3	0	0	
–	1	6	5	0	
	1	6	5	0	

Hence, leftover apples are 1 kg 650 g.

Revision

1. d. 3 km = 300000 cm
2. a. 2 cm + 2 mm

$$\frac{2}{100} + \frac{2}{1000}$$

$= 0.022$

3. d. 40 g 40 mg = 40 g + 40 mg
$= 40 \times 1000$ mg + 40 mg
$= 40000$ mg + 40 mg
$= 40040$ mg
4. c. 6.75 m

$\frac{675}{1000} = 0.00675$

5. d. 56 k*l* 650 m*l*
56×1000000 m*l* + 650 ml
56000000 m*l* + 650 m*l*
56000650 m*l*
6. d. 76 mm

$= \frac{76}{10} = 7.6$ cm

7. c. 8.4 *l* = 8 l 400 m*l*
8. c. 12 hm 8 dam
   12 × 100 m + 8 × 10 m
   1200 m + 80 m = 1280 m
9. b. 6 dm 6mm
   6 × 100 mm + 6 mm
   600 mm + 6 mm = 606 mm
10. c. 1 dal 5 dl
    1 × 10000 m*l* + 5 × 100 m*l*
    1000 m*l* + 500 m*l* = 10500 m*l*
11. Mass of one egg = 65 g
    Mass of 2 dozen eggs = 65 × 24

$$\begin{array}{r} 6\ 5 \\ \times\ 2\ 4 \\ \hline 2\ 6\ 0 \\ +\ 1\ 3\ 0\ 0 \\ \hline 1\ 5\ 6\ 0 \end{array}$$

    Hence, 1.56 kg is mass of 2 dozen eggs.
12. Distance travelled in 1 hr = 16 km 350 m
    Distance travelled in 7 hrs = 16 km 350 m × 7

$$\begin{array}{rrrrrr} & \text{km} & & \text{m} & & \\ & 1\ 6 & & 3 & 5 & 0 \\ & & & & \times & 7 \\ \hline 1 & 1\ 4 & & 4 & 5 & 0 \end{array}$$

    Hence total distance travelled in 7 hrs is 114.45 km
13. Weight of 1 soap bar = 125 g
    Weight of 3 soap bars = 125 × 3 = 375 g
    Weight of 1 detergent cake = 275 g
    Weight of 4 detergent cake = 275 × 4 = 1100 g
    Total weight = 375 g + 1100 g
    = 1475 g = 1 kg 475 g

8.1

1. a. 100 b. 40 % c. $\frac{9}{100}$ d. $\frac{13}{20} \times \frac{5}{5} = \frac{65}{100} = 65\ \%$
   e. decimal fraction
2. a. $\frac{28}{100} = 28\ \%$ b. $\frac{41}{100} = 41\ \%$ c. $\frac{66}{100} = 66\ \%$ d. $\frac{88}{100} = 88\ \%$
   e. $\frac{122}{100} = 122\ \%$ f. $\frac{14}{100} = 14\ \%$ g. $\frac{36}{100} = 36\ \%$ h. $\frac{11}{100} = 11\ \%$

8.2

1. a. $8\,\% = \frac{8}{100} = \frac{2}{25}$ b. $0.4 = (0.4 \times 100)\,\% = 40\,\%$ c.100

2. a. $\frac{\overset{3}{\cancel{6}}}{\underset{50}{\cancel{100}}} = \frac{3}{50}$ b. $\frac{\overset{23}{\cancel{115}}}{\underset{20}{\cancel{100}}} = \frac{23}{4}$ c. $\frac{\overset{4}{\cancel{80}}}{\underset{5}{\cancel{100}}} = \frac{4}{5}$ d. $\frac{\overset{9}{\cancel{45}}}{\underset{20}{\cancel{100}}} = \frac{9}{20}$

e. $\frac{\overset{1}{\cancel{25}}}{\underset{4}{\cancel{100}}} = \frac{1}{4}$ f. $\frac{\overset{3}{\cancel{30}}}{\underset{10}{\cancel{100}}} = \frac{3}{10}$ g. $\frac{\overset{3}{\cancel{130}}}{\underset{10}{\cancel{100}}} = \frac{13}{10}$ h. $\frac{\overset{3}{\cancel{150}}}{\underset{2}{\cancel{100}}} = \frac{3}{2}$

3. a. $\frac{05}{100\times10} = \frac{5}{1000} = 0.005$ b. $\frac{445}{100\times100} = \frac{445}{10000} = 0.0445$

c. $\frac{89}{100\times10} = 0.089$ d. $\frac{66}{100\times10} = 0.066$

e. $\frac{48}{100\times10} = 0.048$ f. $\frac{85}{100\times10} = 0.085$

g. $\frac{33}{100} = 0.33$ h. $\frac{75}{100} = 0.75$

4. a. $\frac{3}{4}\,\% = \frac{3}{4} \div 100 = \frac{3}{4} \times \frac{1}{100} = \frac{3}{400}$

b. $12\frac{1}{2}\,\% = \frac{25}{2} \div 100 = \frac{\overset{1}{\cancel{25}}}{2} \times \frac{1}{\underset{4}{\cancel{100}}} = \frac{1}{8}$

c. $7\frac{1}{7}\,\% = \frac{50}{7} \div 100 = \frac{\overset{1}{\cancel{50}}}{7} \times \frac{1}{\underset{2}{\cancel{100}}} = \frac{1}{14}$

d. $11\frac{1}{4}\,\% = \frac{45}{4} \div 100 = \frac{\overset{9}{\cancel{45}}}{4} \times \frac{1}{\underset{20}{\cancel{100}}} = \frac{9}{80}$

e. $26\frac{2}{3}\,\% = \frac{80}{3} \div 100 = \frac{\overset{4}{\cancel{80}}}{3} \times \frac{1}{\underset{5}{\cancel{100}}} = \frac{4}{15}$

f. $33\frac{1}{3}\,\% = \frac{100}{3} \div 100 = \frac{\overset{1}{\cancel{100}}}{3} \times \frac{1}{\underset{1}{\cancel{100}}} = \frac{1}{3}$

g. $72\,\% = \frac{\overset{18}{\overset{36}{\cancel{72}}}}{\underset{25}{\overset{50}{\cancel{100}}}} = \frac{18}{25}$ h. $60\,\% = \frac{\overset{3}{\cancel{60}}}{\underset{5}{\cancel{100}}} = \frac{3}{5}$

5. a. $\frac{3}{4} = \frac{3}{4} \times \frac{25}{25} = \frac{75}{100} = 75\,\%$ b. $\frac{6}{20} = \frac{6}{20} \times \frac{5}{5} = \frac{30}{100} = 30\,\%$

c. $\frac{4}{5} = \frac{4}{5} \times \frac{20}{20} = \frac{80}{100} = 80\,\%$

d. $1\frac{1}{10} = \frac{11}{10} = \frac{11}{10} \times \frac{10}{10} = \frac{110}{100} = 110\,\%$

e. $1\frac{3}{5} = \frac{8}{5} = \frac{8}{5} \times \frac{20}{20} = \frac{160}{100} = 160\ \%$

f. $\frac{7}{50} = \frac{7}{50} \times \frac{2}{2} = \frac{14}{100} = 14\ \%$

g. $2\frac{5}{10} = \frac{25}{10} = \frac{25}{10} \times \frac{10}{10} = \frac{250}{100} = 250\ \%$

g. $3\frac{7}{20} = \frac{67}{20} = \frac{67}{20} \times \frac{5}{5} = \frac{335}{100} = 335\ \%$

6. a. $(0.01 \times 100)\% = 1\ \%$
   b. $(0.08 \times 100)\ \% = 8\ \%$
   c. $(0.25 \times 100)\ \% = 2.5\ \%$
   d. $(7.5 \times 100)\ \% = 7.5\ \%$
   e. $(4.25 \times 100)\ \% = 425\ \%$
   f. $(0.125 \times 100)\ \% = 12.5\ \%$

8.3

1. a. 10 % of 90

$\frac{1\cancel{0}}{1\cancel{0}\cancel{0}} \times 9\cancel{0} = 9$

b. 55 % of $\frac{1}{7}$ of 2100

$\frac{55}{1\cancel{0}\cancel{0}} \times \frac{1}{\cancel{7}_{1}} \times \overset{3}{\cancel{21}\cancel{0}\cancel{0}} = 165$

2 a. 50 % of 40

$\frac{5\cancel{0}}{1\cancel{0}\cancel{0}} \times 4\cancel{0} = 20$

b. $6\frac{1}{4}$ of 600

$\frac{25}{\cancel{4}_{2}} \times \frac{1}{1\cancel{0}\cancel{0}} \times \overset{3}{\cancel{6}\cancel{0}\cancel{0}} = \frac{75}{2} = 37.5$

c. 75 % of 600

$\frac{75}{1\cancel{0}\cancel{0}} \times 6\cancel{0}\cancel{0} = 450$

d. $\frac{4}{11}$ % of ₹ 880

$\frac{\overset{2}{\cancel{4}}}{\underset{1}{\cancel{11}}} \times \frac{1}{\cancel{100}_{5}} \times \overset{8}{\cancel{880}} = \frac{16}{5} = ₹\ 3.2$

e. 3 % of ₹ 200

$\frac{3}{1\cancel{0}\cancel{0}} \times 2\cancel{0}\cancel{0} = ₹\ 6$

f. $33\frac{1}{2}$ of 900

$\frac{67}{2} \times \frac{1}{100} \times 900 = \frac{603}{2} = 301.5$

g. 20 % of 5 km

$\frac{20}{100} \times 5 = 1$ km

h. 1 % of 100 kg

$\frac{1}{100} \times 100 = 1$ kg

2. a. 20 % of ₹ 10

$\frac{20}{100} \times 10 = ₹ 2$

b. 40 % of ₹ 160

$\frac{40}{100} \times 160 = ₹ 64$

c. 25 % of 12 km

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

d. 10 % of 180 *l*

$\frac{10}{100} \times 180 = 18\ l$

e. 20 % of 4 m

$\frac{20}{100} \times 4 = \frac{4}{5} = 0.8$ m

f. 75 % of 600

$\frac{75}{100} \times 600 = 450$

g. 35 % of 18000

$\frac{35}{100} \times 18000 = 180 \times 35 = ₹ 6300$

h. 20 % discount of ₹ 5000

$\frac{20}{100} \times 5000 = ₹ 1000$

8.4

1. a. No. of toffees purchased = 30
   Percentage of toffees found missing = 10 %
   No. of toffees left $= 30 - \frac{1\cancel{0}}{1\cancel{0}\cancel{0}} \times 3\cancel{0}$
   $= 30 - 3 = 27$

   b. No. of students in a school = 60
   No. of students playing in football = 40 %
   No. of students not playing football $= 60 - \frac{4\cancel{0}}{1\cancel{0}\cancel{0}} \times 6\cancel{0}$
   $= 60 - 24 = 36$

2. a. 800 m of $2\frac{1}{2}$ km
   1 km = 1000 m
   $2\frac{1}{2}$ km = 2 km 500 m = 2500 m
   $\frac{\cancel{8}\cancel{0}\cancel{0}}{2\cancel{5}\cancel{0}\cancel{0}} \times 1\cancel{0}\cancel{0} = 32$ %

   b. ₹ 18 of ₹ 72
   $\frac{\overset{1}{\cancel{1}\cancel{8}}}{\cancel{7}\cancel{2}_{4}} \times \cancel{1}\overset{25}{\cancel{0}\cancel{0}}$ %
   25 %

   c. 4500 m of 9 km
   9 km = 9000 m
   $\frac{\overset{50}{4\cancel{5}0\cancel{0}}}{\cancel{9}\cancel{0}\cancel{0}\cancel{0}_{1}} \times 1\cancel{0}\cancel{0} = 50$ %

   d. 50 p of ₹ 10
   ₹ 10 = 10 × 100 p = 1000 p
   $\frac{5\cancel{0}}{1\cancel{0}\cancel{0}\cancel{0}} \times 1\cancel{0}\cancel{0} = 5$ %

3. Total money = 125
   Spend money = 25
   Percentage of money she spend
   $\frac{\overset{1}{\cancel{2}\cancel{5}_{5}}}{\cancel{1}\cancel{2}\cancel{5}_{5}} \times \cancel{1}\overset{20}{\cancel{0}\cancel{0}} = 20$ %
   Hence, 20 % of money is spend

4. Total No. of students = 60
   Percentage of boys = 40
   No. of boys = $\frac{4\cancel{0}}{1\cancel{0}\cancel{0}} \times 6\cancel{0} = 24$

5. Total pages of book = 160
   She read pages = 128

Percentage of book she read $= \frac{\cancel{128}^{\cancel{32}^{8}}}{\cancel{160}_{\cancel{4}_{1}}} \times 10\cancel{0}\% = 80\ \%$

6. Tamanna got marks $= 375$

Percentage of marks she get $= \frac{\cancel{375}^{75}}{\cancel{5}\cancel{0}\cancel{0}_{1}} \times 1\cancel{0}\cancel{0}\% = 75\ \%$

7. Earningof the month $= 20000$

Saving of the month $= 6000$

Saving percentage $= \frac{\cancel{6000}}{\cancel{20000}} \times \cancel{100}^{5}\% = 30\ \%$

8. Mango trees $= 35\%$

Papaya trees $= 40\ \%$

Banana trees $= 25\ \%\ (100\% - 75\%)$

No. of banana trees $= \frac{\cancel{25}^{1}}{\cancel{100}_{\cancel{4}_{1}}} \times \cancel{420}^{105} = 105$

Hence, there are 105 banana trees.

9. Earnings per month $= 2700$

Spendings per month $= \frac{100}{3}\ \%$

Amount spend $= \frac{\cancel{100}}{\cancel{3}} \times \frac{1}{\cancel{100}} \times \cancel{2700}^{900} = ₹\ 900$

Hence, ₹ 900 is spend on household items

10. Original price $= ₹\ 625$

Percentage of price reduced $= 25\ \%$

New price of shoes $= 625 - 625 \times \frac{\cancel{25}^{1}}{\cancel{100}_{4}}$

$= 626 - \frac{625}{4}$

$= 625 - 156.25 = ₹\ 468.75$

11. Percentage of marks $= \frac{32}{\cancel{50}} \times \cancel{100}^{2}\%$

$= 64\ \%$

12. Monthly salary $= 15000$

Spending on rent $= 20\ \%$

Spending on food $= 15\ \%$

Money left $= 15000 - \frac{35}{\cancel{100}} \times 150\cancel{00}$

$= 15000 - 5250$

$= ₹\ 9750$

Revision

1. $\frac{8}{1\cancel{0}} \times 10\cancel{0} = 80\ \%$

2. $\frac{328}{100} \times 100 = 328\ \%$

3. $\frac{0.04}{100} \times 100 = 4\ \%$

4. $5\frac{1}{5} = \frac{26}{5} \times \frac{20}{100} = 520\ \%$

2. a. $\frac{\overset{7}{\cancel{35}}}{\underset{20}{\cancel{100}}} = \frac{7}{20}$

   b. $16\frac{2}{3}\% = \frac{\cancel{50}}{3} \times \frac{1}{2\cancel{100}} = \frac{1}{6}$

   c. $3\frac{3}{4}\% = \frac{\overset{3}{\cancel{15}}}{4} \times \frac{1}{\underset{20}{\cancel{100}}} = \frac{3}{80}$

   d. $75\ \% = \frac{75}{100} = \frac{3}{4}$

3. a. $51\ \% = \frac{51}{100} = 0.51$

   b. $3.5\ \% = \frac{35}{100 \times 10} = 0.035$

   c. $80.5\ \% = \frac{805}{100 \times 10} = 0.805$

   d. $60\ \% = \frac{60}{100} = 0.60$

4. a. 40 % of 1 kg

   $\frac{40}{\cancel{100}} \times 1\cancel{000}\ \text{g} = 400\ \text{g}$

   b. $12\frac{1}{2}$ % of 36

   $\frac{\overset{1}{\cancel{25}}}{2} \times \frac{1}{\underset{4}{\cancel{100}}} \times \overset{9}{\cancel{36}} = \frac{9}{2} = 4\frac{1}{2}$

   c. 50 % of ₹ 400

   $\frac{50}{\cancel{100}} \times 4\cancel{00} = ₹\ 200$

   d. $4\frac{1}{4}$ % of 4 *l*

   $\frac{17}{\underset{1}{\cancel{4}}} \times \frac{1}{1\cancel{00}} \times \overset{10\cancel{00}}{\cancel{4000}}\ \text{m}l = 170\ \text{m}l$

5. a. 1 % of 1 m $= \frac{1}{100} \times 1\ \text{m} = 0.01\text{m}/1\text{cm}$

   b. $6\frac{2}{3}$ % of ₹ 12000

   $\frac{20}{\underset{1}{\cancel{3}}} \times \frac{1}{1\cancel{00}} \times \overset{40}{\cancel{12000}} = ₹\ 800$

6. a. 50 % of 40 – 30 % of 30

$\frac{5\not{0}}{1\not{0}\not{0}} \times 4\not{0} - \frac{3\not{0}}{1\not{0}\not{0}} \times 3\not{0} = 20 - 9 = 11$

b. 25 % of 500 + 10 % of 1000

$\frac{25}{1\not{0}\not{0}} \times 5\not{0}\not{0} + \frac{10}{1\not{0}\not{0}} \times 10\not{0}\not{0} = 125 + 100 = 225$

7. $\frac{19}{100}$

8. $\frac{3}{100} = \frac{3}{1\not{0}\not{0}} \times 1\not{0}\not{0} = 3\%$

9.1

1. a. ₹ 4.56
   (4.56 × 100) P = 456 p
   b. ₹ 72.67 = 72.67 × 100 p
   = 7267 p
   c. ₹ 120.05 = 20.05 × 100 p
   = 12005 p
   d. ₹ 70.70 = 70.70 × 100 p
   = 7070 p
   e. ₹ 0.90 = 0.90 × 100 p
   = 900 p
   f. ₹ 0.05 = 0.05 × 100 p
   = 5 p
   g. ₹ 0.10 = 0.10× 100 p
   = 10 p
   h. ₹ 0.06 = 0.06 × 100 p
   = 6 p
2. a. 16 rupees 85 p
   16 × 100 p + 85 p
   1600 p + 85 p = 1685 p
   b. 8 rupees 8 p
   8 × 100 p + 8 p
   800 p + 8 p = 808 p
   c. ₹ $57\frac{1}{2}$
   57 + 50 p
   57 × 100 p + 50 p
   5700 p + 50 p = 5750 p
   d. ₹ $21\frac{1}{4}$

₹ 21 × 100 + 25 p

2100 p + 25 p = 2125 p

e. ₹ $23\frac{3}{4}$

₹ 23 × 100 + 75 p

2300 p + 75 p = 2375 p

f. 60 rupees 60 p = ₹ 60 + 60 p

= 60 × 100 p + 60 p

= 6000 p + 60 p = 6060 p

3. a. 3365 p = ₹ $\frac{3365}{100}$ = ₹ 33.65

b. 8000 p = ₹ $\frac{8000}{100}$ = ₹ 80

c. 574 p = ₹ $\frac{574}{100}$ = ₹ 5.74

d. 808 p = ₹ $\frac{808}{100}$ = ₹ 8.08

e. 99 p = ₹ $\frac{99}{100}$ = ₹ 0.99

f. 200 p = ₹ $\frac{200}{100}$ = ₹ 2.00

g. 18 p = ₹ $\frac{18}{100}$ = ₹ 0.18

h. 9 p = ₹ $\frac{9}{100}$ = ₹ 0.09

9.2

1. a.

	₹		P
	1 1	1	
	2 4	6	5
+	5 7	8	5
	8 2	5	0

₹ 82.50

b.

	₹		P
	1 1	1	
	6 3	8	4
+	4 9	7	6
	1 1 3	6	0

₹ 113.60

c.

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

₹ 109.45

d.

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

₹ 922.10

e.

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

₹ 579.10

2. a.

	₹		P
	0 9 9	9	10
	~~1~~ ~~0~~ ~~0~~	~~0~~	~~0~~
–	9 4	6	8
	0 5	3	2

₹ 5.32

b.

	₹		P
	7 9 10	5	10
	~~8~~ ~~0~~ ~~0~~	~~6~~	~~0~~
–	6 7 4	5	4
	1 2 6	0	6

₹ 126.06

c.

	₹		P
	~~4~~ 16	9	15
	~~5~~ ~~7~~	~~0~~	~~5~~
–	3 9	8	7
	1 7	1	8

₹ 17.18

d.

	₹		P
	~~6~~ 9 12	~~0~~	10
	~~7~~ ~~0~~ ~~3~~	~~0~~	~~0~~
–	5 4 7	8	5
	1 5 5	1	5

₹ 155.15

3. CP of Hockey = ₹ 163.25
SP of hockey = ₹ 205.00
Earnings = ₹ 205.00 – ₹ 163.25

	₹		P
	1 10 4	9	10
	~~2~~ ~~0~~ ~~5~~	~~0~~	~~0~~
–	1 6 3	2	5
	4 1	7	5

₹ 41.75 is the earnings

4. CP of mangoes = ₹ 132.80
CP of apples = ₹ 87.95
CP of grapes = ₹ 73.40
Total money paid = ₹ 132.80 + ₹ 87.95 + ₹ 73.40

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

Hence, total amount paid is ₹ 294.15

5. Money spent on stationery = ₹ 785.65
Money given to shopkeeper = ₹ 1000
Money recieved back = ₹ 1000 – ₹ 785.65

	₹			P
	9	9	9	9 10
	1 0	0	0	0 0
−	7	8	5	6 5
	2	1	4	3 5

Hence, ₹ 214.35 is recieved back.

9.3

1. a. ₹ 107.96 × 15

₹			P
1	0 7	9	6
	×	1	5
5	3 9	8	0
1 0	7 9	6	×
1 6	1 9	4	0

₹ 1619.40

b. ₹ 405.05 × 18

₹			P
4	0 5	0	5
	×	1	8
3 2	4 0	4	0
4 0	5 0	5	×
7 2	9 0	9	0

₹ 7290.90

c. ₹ 260.54 × 46

₹			P
2	6 0	5	4
	×	4	6
1 5	6 3	2	4
10 4	2 1	6	×
11 9	8 4	8	4

₹ 11984.84

d. ₹ 410.37 × 60

	₹	P
	4 1 0	3 7
	×	6 0
	0 0 0	0 0
	24 6 2 2	2 ×
	24 6 2 2	2 0

₹ 24622.20

2. a. ₹ 83.50 ÷ 5

5) 8 3 .5 0 (16.70
− 5
3 3
− 3 0
3 5
− 3 5
0 0
− 0
0

b. ₹ 283.25 ÷ 11

11) 2 8 3. 2 5 (25.75
− 2 2
6 3
− 5 5
8 2
− 7 7
5 5
− 5 5
0

Q = ₹ 25.75 R = 0

c. ₹ 658.70 ÷ 14

14) 6 5 8. 7 0 (47.05
− 5 6
9 8
− 9 8
0 7 0
− 7 0
0

Q = ₹ 47.05 R = 0

d. ₹ 520.00 ÷ 16

```
16) 5 2 0. 0 0 ( 32.05
  - 4 8 ↓
    4 0
  - 3 2 ↓
      8 0
    - 8 0 ↓
        0 0
      - 0
        0
```

Q = ₹ 32.50 R = 0

3. Cost of 1 table = ₹ 247. 60
   Cost of 15 tables = ₹ 247.60 × 15

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

∴ cost of 15 tables are ₹ 3714.00

4. Cost of 1kg rice = ₹ 35. 80
   Cost of 24 kg rice = ₹ 35. 80 × 24

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

∴ cost of 24 kg of rice is ₹ 859.20

5. Cost of 16 kg wheat = ₹ 616. 00
   Cost of 16 kg wheat = ₹ 616. 00 × 16

```
16) 6 1 6. 0 0 ( 38.50
  - 4 8 ↓
    1 3 6
  - 1 2 8 ↓
      8 0
    - 8 0 ↓
        0 0
      - 0
        0
```

∴ cost of 1 kg wheat is ₹ 38.50

6. Cost of 17 ice cream = ₹ 901. 85

Cost of 1 ice cream = ₹ 901. 85 × 17

$$
\begin{array}{r}
17\overline{)\,9\;0\;1.\;8\;5\,(\,53.05} \\
-\;8\;5\downarrow \\
\hline
\quad 5\;1 \\
-\;5\;1\downarrow\downarrow \\
\hline
\quad\quad 0\;8\;5 \\
\quad\quad -\;8\;5 \\
\hline
\quad\quad\quad 0
\end{array}
$$

∴ cost of 1 ice cream is ₹ 53.05

7. Cost of 14 kg onions = ₹ 231. 00

Cost of 14 kg onions = ₹ 231. 00 × 14

$$
\begin{array}{r}
14\overline{)\,2\;3\;1.\;0\;0\,(\,16.50} \\
-\;1\;4\downarrow \\
\hline
\quad 9\;1 \\
-\;8\;4\downarrow \\
\hline
\quad\quad 7\;0 \\
\quad\quad -\;7\;0\downarrow \\
\hline
\quad\quad\quad 0\;0 \\
\quad\quad\quad -\;0 \\
\hline
\quad\quad\quad\quad 0
\end{array}
$$

∴ cost of 1 kg onion is ₹ 16.50

8. Cost of 1 biscuit packet = ₹ 53. 85

Cost of 15 biscuit packets = ₹ 53. 85 × 15

₹		P	
5	3	8	5
	×	1	5
2	6	9	2	5
5	3	8	5	×
8	0	7	7	5

∴ cost of 15 biscuit packets are ₹ 805.75

9.4

1. Weight of 15 tiles = 20 kg

Weight of 1 tile = $\frac{20}{15}$

Weight of 10 tiles = $\frac{20}{\cancel{15}_{3}} \times \cancel{10}^{2} = \frac{40}{3} = 13.3$ kg

∴ weight of 10 tiles are 13.3 kg

2. Cost of 12 bananas = ₹ 48

Cost of 1 bananas = ₹ $\frac{48}{12}$

Cost of 8 bananas = $\frac{\cancel{48}^{4}}{\cancel{12}_{1}} \times 8$ = ₹ 32

∴ cost of 8 bananas are ₹ 32

3. Cost of 8 toys = ₹ 56

Cost of 1 toys = ₹ $\frac{56}{8}$

Cost of 12 toys = $\frac{\overset{7}{\cancel{56}}}{\underset{1}{\cancel{8}}} \times 12 = 84$

∴ cost of 12 toys are ₹ 84

4. Cost of 5 kg apples = ₹ 160

Cost of 1 kg apples = ₹ $\frac{160}{5}$

Cost of 2 kg apples = $\frac{\overset{32}{\cancel{160}}}{\underset{1}{\cancel{5}}} \times 2 = 64$

∴ cost of 2 kg apples is ₹ 64

5. Distance covered in 4 hrs = 24 km

Distance covered in 1 hrs = $\frac{24}{4}$

Distance covered in 20 hrs = $\frac{24}{\underset{1}{\cancel{4}}} \times \overset{5}{\cancel{20}} = 120$

∴ Distance covered in 20 hrs 120 km

6. Cost of 20 pencils = ₹ 180

Cost of 1 pencil = $\frac{180}{20}$ = ₹ 9

Cost of 15 pencils = ₹ 120

9 × 15 = ₹ 135

∴ It is better to buy 15 pencils for ₹ 120

10

1. a. 5, 10, 15, 20, 25

$\frac{5 + 10 + 15 + 20 + 25}{\underset{1}{\cancel{5}}} = \frac{75}{5} = 15$

b. $24 \div 4 = \overset{1}{\cancel{6}}$

c. Average

2. a. Average $= \frac{\text{Sum of given no's}}{\text{No. of the these numbers}}$

$= \frac{10 + 12 + 14 + 16 + 18}{5} = \frac{70}{5} = 14$

b. Average $= \frac{\text{Sum of given no's}}{\text{No. of the these numbers}}$

$= \frac{5 + 6 + 7}{3} = \frac{18}{3} = 6$

c. Average $= \frac{\text{Sum of given no's}}{\text{No. of the these numbers}}$

$$= \frac{9.3 + 6.7 + 7.4 + 8.2}{4} = \frac{31.6}{4} = 7.9$$

d. Average $= \dfrac{\text{Sum of given no's}}{\text{No. of the these numbers}}$

$$= 6\frac{2}{5}, 5\frac{3}{10}, 4\frac{1}{5}, \text{ and } 7\frac{7}{10}$$

$$= \frac{32}{5}, \frac{53}{10}, \frac{21}{5}, \frac{77}{10}$$

$$= \frac{6.4 + 5.3 + 4.2 + 7.7}{4} = \frac{23.6}{10} = 5.9$$

e. Average $= \dfrac{15 + 17 + 0 + 18}{4} = \dfrac{50}{4} = 12.5$

f. Average $= \dfrac{2.5 + 5.0 + 75 + 10.0 + 125}{5} = \dfrac{375}{5} = 75$

3. a. Average $= \dfrac{1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9}{9} = \dfrac{45}{9} = 5$

b. Average $= \dfrac{3 + 6 + 9 + 12 + 15 + 18}{6} = \dfrac{63}{6} = 10.5$

c. Average $= \dfrac{16 + 18 + 20 + 22 + 24 + 26}{6} = \dfrac{126}{6} = 21$

d. Average $= \dfrac{2 + 3 + 5 + 7 + 11}{6} = \dfrac{28}{5} = 5.6$

e. Average $= \dfrac{21 + 23 + 25 + 27 + 29}{5} = \dfrac{125}{5} = 25$

f. Average $= \dfrac{23 + 29}{2} = \dfrac{52}{2} = 26$

4. Average speed of the bus per hour $= \dfrac{\text{Total distance}}{5 \text{ hrs}}$

$$= \frac{68 + 72 + 65 + 80 + 55}{5}$$

$$= \frac{340}{5} = 68 \text{ km/ hrs}$$

5. Average length of per piece $= \dfrac{\text{Sum of all lengths}}{4}$

$$= \frac{13\text{m } 80\text{cm} + 12\text{m } 25\text{cm} + 16\text{m } 75\text{cm} + 17\text{m } 20\text{cm}}{4}$$

$$= \frac{1380\text{cm} + 1225\text{cm} + 1675\text{cm} + 1720\text{cm}}{4}$$

$$= \frac{6000}{4} = 1500 \text{ cm} = 1 \text{ m } 500 \text{ cm}$$

6. Average score per match $= \dfrac{104 + 66 + 238 + 42 + 180 + 126}{6}$

$$= \frac{756}{6} = 126$$

7. Average earnings per month $= \dfrac{8500 \times 4 + 10{,}000 \times 2}{6}$

$$= \frac{34{,}000 \times 20{,}000}{6}$$

$$= \frac{54{,}000}{6} = 9{,}000$$

8. Average price per chair $= \frac{732 + 750 + 690 + 793 + 700 + 745}{6}$

$$= \frac{4410}{6} = 735$$

Revision

1. a. Average $= \frac{3 + 2 + 7 + 8 + 5}{5} = \frac{25}{5} = 5$

   b. Average $= \frac{6 + 12 + 18 + 24 + 30}{5} = \frac{90}{5} = 18$

   c. Average $= \frac{18 + 24 + 32 + 46 + 54}{5} = \frac{174}{5} = 34.8$

   d. Average $= \frac{36 + 50 + 54 + 77 + 83}{5} = \frac{300}{5} = 60$

   e. Average $= \frac{1}{4}, 3\frac{1}{4}, 4\frac{3}{4}, 5\frac{1}{4}, 7\frac{1}{2}$

$$= \frac{\frac{1}{4}, \frac{13}{4}, \frac{19}{4}, \frac{21}{4} + \frac{15}{4}}{5} = \frac{23.6}{10} = 5.9$$

$$= \frac{1 + 13 + 19 + 21 + 30}{4} \times \frac{1}{5} = \frac{84}{20} = \frac{21}{5} = 4\frac{1}{5}$$

   f. Average $= \frac{\frac{4}{5}, \frac{3}{2}, \frac{5}{6}}{3} = \frac{23.6}{10} = 5.9$

$$= \frac{\frac{24 + 45 + 25}{30}}{3}$$

$$= \frac{94}{30} \times \frac{1}{3} = \frac{94}{90} = 1\frac{4}{90}$$

2. Average $= \frac{1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10}{10} = \frac{55}{10} = 5.5$

3. Average $= \frac{15 + 30 + 45 + 60 + 75}{15} = \frac{225}{15} = 15$

4. Average daily temp.$= \frac{31.5 + 42.2 + 43.2 + 38.4 + 46.2}{5} = \frac{201.5}{5} = 40.3$

5. Average daily earnings$= \frac{2.4 + 2.7 + 2.9 + 3.5 + 40 + 20}{6} = \frac{175}{5} = ₹\ 29.1$

6. Average score per match $= \frac{6.2 + 2.5 + 6.5 + 7.5 + 105}{5} = \frac{332}{5} = 66.4$

7. Average marks$= \frac{84 + 72 + 84}{3} \times \frac{240}{3} = 80$

11.1

1. a. line segent b. line segment c. Ray d. line
2. a. (vi) b. (i) c. (v) d. (iii) e. (i) f. (iv)
3. a. no b. definite c. cannot d. one e. $\overline{AB}$
4. a. Line segment = $\overline{oz}$, $\overline{ox}$
   Rays = $\overrightarrow{zw}$, $\overrightarrow{xy}$
   b. Line segment = $\overline{BC}$, $\overline{CD}$, $\overline{BD}$
   Rays = $\overrightarrow{BA}$, $\overrightarrow{CF}$, $\overrightarrow{DE}$
   c. Line segment = $\overline{PQ}$, $\overline{QR}$
   Rays = $\overrightarrow{RS}$
5. Do it yourself

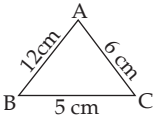
11.2

1. a. Equilateral triange- as all sides are equal in length.
   b. Isosceles triange- as two sides are equal.
   c. Scalene triangle- as all sides have different length.
   d. Scalene triangle- all sides have different length.
   e. Isosceles triange- as two sides are equal.
   f. Equiateral triangle- as all the sides are equal in length.
2. Do it yourself.
3. a. Yes, it is an equilateral triangle.
   b. 1. $6.5 + 16.5 > 5.6$
   $23.0 > 5.6$
   2. $6.5 + 5.6 < 16.5$
   $12.1 < 16.5$
   As sum of the length of two sides of triangle is always greater than the length of their side, but in no's it is not possible so Δ is not possible.
   c. $8 + 5 > 15$ $8 + 15 > 5$ $15 + 5 > 8$
   $13 < 15$ $23 > 5$ $20 > 8$
   No , it is not possible to draw triangle.
   d. 1. $7 + 8 > 10$ 2. $7 + 10 > 8$
   $15 > 10$ $17 > 8$
   3. $8 + 10 > 7$
   $18 > 7$
   Yes it's possible to draw Δ
   e. $6 + 7 > 13$ $6 + 13 > 7$ $13 + 7 > 6$
   $13 > 13$ $19 > 7$ $20 > 6$
   Yes it is possible to draw Δ
   f. $7 + 6 > 11$ $7 + 11 > 6$ $6 + 11 > 7$
   $13 > 11$ $17 > 6$ $17 > 7$
   Yes it is possible to draw Δ

4. a. F b. F c. T d. F e. T

11.3

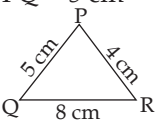
1. a. AB = 12 cm BC = 5 cm AC = 6 cm



1. $12 + 6 > 5$
   $18 > 5$
2. $6 + 5 < 12$
   $11 < 12$
3. $12 + 5 > 6$
   $17 > 6$

   Not possible to draw.

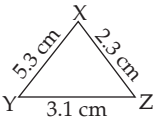
b. PQ = 5 cm QR = 8 cm PR = 4 cm



1. $5 + 4 > 8$
   $9 > 8$
2. $5 + 8 > 4$
   $13 > 4$
3. $8 + 4 > 5$
   $12 > 5$

   Yes, it is possible to draw Δ PQR.

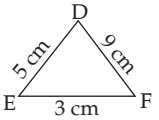
c.



1. $5.3 + 3.1 > 2.3$
   $8.4 > 2.3$
2. $5.3 + 2.3 > 3.1$
   $7.6 > 3.1$
3. $2.3 + 3.1 > 5.3$
   $5.4 > 5.3$

   Yes, it is possible to draw Δ XYZ.

d.

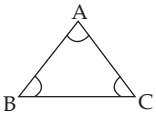


1. $5 + 3 < 9$

$8 < 9$

2. $5 + 9 > 3$
   $14 > 3$
3. $3 + 9 > 5$
   $12 > 5$

   No, it is not possible to draw Δ DEF.

2. a. 

   $\angle A + \angle B + \angle C = 180°$
   (Sum of 3 angles of triangle is 180°)
   $\angle A + 59° + 41° = 180°$
   $\angle A + 100° = 180°$
   $\angle A + 180° + 100° = 80°$

   b. $\angle P + \angle Q + \angle R = 180°$
   (Sum of all 3 angles of triangle is 180°)
   $\angle P + 75° + 35° = 180°$
   $\angle P + 110° = 180°$
   $\angle P + 180° - 100° = 70°$

   c. $\angle X + \angle Y + \angle Z = 180°$
   $\angle X + 118° + 35° = 180°$
   $\angle X + 153° = 180°$
   $\angle X + 180° - 153° = 27°$

   d. $\angle L + \angle M + \angle N = 180°$
   $26° + 66° + \angle N = 180°$
   $\angle N + 92° = 180°$
   $\angle N + 180° - 92 = 88°$

3. 1. $3.5 + 5 > 7.5$
      $8.5 > 7.5$
   2. $5 + 7.5 > 3.5$
      $12.5 > 3.5$
   3. $7.5 + 3.5 > 5$
      $11.0 > 5$

   Yes, it is possible to draw triangle (sum of the lengths of any two sides of Δ is always greater than the length of the third side).

b. 10 cm, 12 cm, 8 cm
   1. $10 + 12 > 8$
      $22 > 8$
   2. $10 + 8 > 12$
      $18 > 12$

3. $12 + 8 > 10$
   $20 > 10$
   Yes, it is possible to draw triangle (sum of the lengths of any two sides of Δ is always greater than the length of the third side).

c. 50°, 50°, 90°
   50°+ 50°+ 90° = 190°
   The triangle is not possible as the sum of the angles of triangle are more than 180°.

d. 35°, 65°, 80°
   35°+ 65°+ 80° = 180°
   The triangle is possible as the sum of three angles of triangle is 180°.

e. 70°, 70°, 70°
   70°+ 70°+ 70° = 210°
   The triangle is not possible as the sum of the 3 angles of triangle are more than 180°.

f. 110°, 60°, 30°
   110°+ 60°+ 30° = 200°
   The triangle is not possible as the sum of the 3 angles of triangle are more than 200°.

4. Sum of two angles of triangle = 80°
   Third angle = ?
   $\angle 1 + \angle 2 + \angle 3 = 180°$ (Sum of all 3 angles of triangle is 180°)
   $80° + \angle 3 = 180°$
   $\angle 3 = 180° - 80° = 100°$

5. a. F b. T c. T d. T

6. a. Obtuse angled because the third angle is obtuse 120°. (180 – 60°)
   b. Obtuse angled, because one the angle is obtuse angle ie. 105°
   c. Right angled, because the third angle is 90° ie right angle (180°–45° = 45°)
   d. Right angled, because the third anlge is 90° ie right angle (180°–60° = 90°)
   e. Acute angled, because the third angle is 60°, (180°–60°–60°)

11.4

1. a. Half b. 2 c. Half d. longest
   e. circumference f. r g. chord h. diameter
2. a. Radii = OX, OY, OA, OD, OC, OE, OB
   b. Diameter = XY, CD, AB
3. a. Chords= CD, AR, BQ, AB
   b. Radii = OC, OD, OA, OB, OR, OQ, OP, OS
   c. Diameters = AB, SD, PC
4. a. Diameter = 6 cm

Radius $= \frac{\text{Diameter}}{2} = \frac{6}{2} = 3$

b. Diameter $= 18.8$ cm

Radius $= \frac{\text{Diameter}}{2} = \frac{18.8}{2} = 9.4$ cm

c. Diameter $= 9.2$ cm

Radius $= \frac{\text{Diameter}}{2} = \frac{9.2}{2} = 4.6$ cm

d. Diameter $= 12$ cm

Radius $= \frac{\text{Diameter}}{2} = \frac{12}{2} = 6$ cm

5. a. Radius $= 8$ cm

Diameter $= 2 \times 8 = 16$ cm

b. Radius $= 5\frac{1}{2}$ cm $= \frac{11}{2}$ cm

Diameter $= 2 \times$ Radius

$= 2 \times \frac{11}{2} = 11$ cm

c. Radius $= 16.4$ cm

Diameter $= 2 \times$ Radius

$= 2 \times 16.4 = 32.8$ cm

d. Radius $= 20.8$ cm

Diameter $= 2 \times$ Radius

$= 2 \times 20.8 = 41.6$ cm

6. a. Circumference $= 2\pi r$

Radius $= 7$ cm

$= 2 \times \pi r$

$= 2 \times \frac{22}{7} \times 7 = 44$ cm

b. Radius $= 6.3$ cm

Circumference $= 2\pi r$

$= 2 \times \frac{22}{\cancel{7}_{1}} \times \frac{\cancel{63}^{9}}{10} = \frac{44 \times 9}{10} = \frac{396}{10} = 39.6$ cm

c. Radius $= 5.6$ cm

Circumference $= 2\pi r$

$= 2 \times \frac{22}{\cancel{7}_{1}} \times \frac{\cancel{56}^{8}}{10} = \frac{44 \times 8}{10} = \frac{352}{10} = 35.2$ cm

d. Radius $= 4.2$ cm

Circumference $= 2\pi r$

$= 2 \times \frac{22}{\cancel{7}_{1}} \times \frac{\cancel{42}^{6}}{10} = \frac{44 \times 6}{10} = \frac{264}{10} = 26.4$ cm

7. a. Radius $= 11$ cm

Circumference $= 2\pi r$

$= 2 \times 3.14 \times 11 = 69.08$ cm

b. Radius $= 22$ cm

Circumference $= 2\pi r$

$= 2 \times 3.14 \times 22 = 138.16$ cm

c. Radius $= 4.5$ cm

Circumference $= 2\pi r$

$= 2 \times 3.14 \times 4.5 = 28.26$ cm

d. Radius $= 6.5$ cm

Circumference $= 2\pi r$

$= 2 \times 3.14 \times 6.5 = 40.82$ cm

8. a. Circumference $= 66$ cm

$2\pi r = 66$

$2r \times \frac{22}{7} = 66$

$2r = \frac{66 \times 7}{22} = 21$ cm

Diameter $= 2r = 21$ cm

b. Circumference $= 44$ cm

$2\pi r = 44$

$2r \times \frac{22}{7} = 44$

$2r = \frac{44 \times 7}{22} = 14$ cm

Diameter $= 2r = 14$ cm

c. Circumference $= 30.8$ cm

$2\pi r = 30.8$

$2r \times \frac{22}{7} = 30.8$

$2r = \frac{\cancel{154}^{14} \times 7}{\cancel{22} \times 10_{1}} = \frac{98}{10}$ cm

Diameter $= 2r = 9.8$ cm

d. Circumference $= 154$ cm

$2\pi r = 154$

$2r \times \frac{22}{7} = 154$

$2r = \frac{\cancel{154}^{7} \times 7}{\cancel{22}_{1}} = 49$ cm

Diameter $= 2r = 49$ cm

9. Do it yourself

10-12. Do it yourself

Revision

1. a. $\overrightarrow{AB}$ 2. a. $\overleftrightarrow{PQ}$ 3. c. $\overline{CY}$

4. c. $60°$

5. a. $40° + 75° + 65° = 180°$ 6. d. $180°$

7. a. 48° (180°–98.5°–33.5°) = 180° – 132
8. b. Diameter 9. c. Compass 10. d. Any number
11. d. Circumference = $2 \pi r = 2 \times \frac{22}{7} \times 7 = 44$ cm
12. c. 4 times 13. b. Diameter
14. d. $2 \pi r = 88$

$2r \times \frac{22}{7} \times 88$

$2r = 2 \times \frac{\cancel{88}^{4} \times 7}{\cancel{22}_{1}} = 28$ cm

15. a. Line

12.1

1. a. 10 : 00 a.m. b. 10 : 00 p.m. c. 1 : 25 a.m. d. 13 : 30 hrs
   e. 0345 hrs f. 12 : 15
2. a. 14 minutes
   1 minutes = 60 seconds
   14 mins = 14 × 60 = 840 seconds
   b. 8 mins 30 seconds
   1 min = 60 seconds
   8 mins = 8 × 60 = 480 seconds
   8 mins 30 seconds = 480 sec + 30 sec
   = 510 sec
   c. 1 hours = 60 mins
   2 hours = 60×2 = 120
   1 min = 60 sec = 120 min = 120×60 = 7200 sec
3. a. 8 hours
   1 hr = 60 mins
   8 hrs = 8 × 60 = 480 mins
   b. 23 hours
   1 hr = 60 mins
   23 hrs = 23 × 60 = 1380 mins
   c. 6 hours 40 mins
   1 hr = 60 mins
   6 hrs 40 mins = 6 × 60 + 40 mins
   = 360 mins + 40 mins = 400 mins
   d. 5 hours 35 mins
   1 hr = 60 mins
   5 hours 35 mins = 5 × 60 + 35 mins
   = 300 mins + 35 mins = 335 mins
4. a. 290 seconds
   1 min = 60 seconds
   290 ÷ 60 = 4 hrs 50 secs

$$\begin{array}{r} 60\overline{)290}\ (4 \\ -240 \\ \hline 50 \end{array}$$

b. 470 seconds

1 min = 60 seconds

470 ÷ 60

$$\begin{array}{r} 60\overline{)470}\ (7 \\ -420 \\ \hline 50 \end{array}$$

7 mins 50 seconds

c. 865 seconds

1 min = 60 seconds

$$\begin{array}{r} 60\overline{)865}\ (14 \\ -60\downarrow \\ \hline 265 \\ 240 \\ \hline 25 \end{array}$$

14 min = 25 seconds

5. a. 740 mins

1 hrs = 60 mins

740 ÷ 60

$$\begin{array}{r} 60\overline{)740}\ (12 \\ -60\downarrow \\ \hline 140 \\ 120 \\ \hline 20 \end{array}$$

= 12 hrs 20 mins

b. 610 mins

1 hrs = 60 mins

610 ÷ 60

$$\begin{array}{r} 60\overline{)610}\ (10 \\ -60\downarrow \\ \hline 10 \\ 00 \\ \hline 10 \end{array}$$

= 10 hrs 10 mins

c. 132 mins

1 hrs = 60 mins

132 ÷ 60

60) 1 3 2 (20

− 1 2 0

1 2

= 20 hrs 12 mins

6. a.

	Mins	Sec
	30	15
+	12	50
	42	65
+	1	-60
	43	05

43 min 5 sec

b.

	hrs	min
	4	25
+	7	35
	11	60
+	1	-60
	12	00

12 hrs

c.

	hours	min	Sec
	10	00	20
+	16	00	55
	26	00	75
+		1	-60
	26	1	15

26 hrs 1 min 15 sec

7. a.

	Hrs	Mins
	~~8~~ ^{7}	~~45~~ $^{60+45=105}$
−	6	50
	1	55

1 hrs 55 mins

b.

	Mins	Secs
	~~13~~ ^{12}	~~35~~ $^{60+35=95}$
−	7	45
	5	50

5 mins 50 secs

c.

	Mins	Secs
	^{2}~~30~~ ^{10}	^{4}~~55~~ ^{15}
−	11	36
	19	19

19 hrs 19 mins

8. a. 8 : 55 a.m. to 2 : 35 p.m.

	hrs.	Mins
8 : 55 a.m. to 9 : 00 a.m.		5
9 : 00 a.m. to 2 : 00 p.m.	5	
2 : 00 p.m. to 2 : 35 p.m.	+	35
	5	40

= 5 hrs 40 mins

. b. 2 : 05 a.m. to 8 O'clock night

	hrs.	Mins
2 : 05 p.m. to 3 : 00 p.m.		55
3 : 00 p.m. to 8 : 00 p.m.	5	
	5	55

= 5 hrs 55 mins

c. 10:34 p.m. to 6:47 a.m. next day.

		hrs.	Mins
10 : 34 p.m. to 11 : 00 p.m.			26
11 : 00 p.m. to 12 midnight		1	
12 midnight to 6 : 00 a.m.		6	00
6 : 00 a.m. to 6 : 47 a.m.	+		47
		7	73
	+	1	(–60)
		8	13

= 8 hrs 13 mins

9. a. 6 : 35 a.m. to 10 : 20 a.m.

		hrs.	Mins
6 : 35 a.m. to 7 : 00 a.m.			25
7 : 00 a.m. to 10 : 00 a.m.		3	
10 : 00 p.m. to 10 : 20 p.m.	+		20
		3	45

= 3 hrs 45 mins

b. 8 : 25 p.m. on Friday to 8 : 25 a.m. on Saturnday

		hrs.	Mins
8 : 25 p.m. to 9 : 00 9.m.			35
9 : 00 p.m. to 8 : 00 a.m.		11	
8 : 00 a.m. to 8 : 25 a.m.	+		25
		11+1	60–60

= 11 hrs 60 mins = 12 hrs

10. Children went for picnic = 9 : 05 a. m.

Children returned back = 2 : 35 p.m

Picnic last for =

		hrs.	Mins
9 : 05 a.m. to 10 : 00 a.m.			55
10 : 00 a.m. to 2 : 00 p.m.		4	
2 : 00 p.m to 2 : 35 p.m.	+		35
		4	90
			(–60)
	+	1	
		5	30

Hence picnic last for 5 hrs 30 mins.

11. Starting time of home work = 5 : 30 p.m

Complete work = 1 hrs 30 mins

Finishing time of home work = 5 : 30 p.m. + 1 hrs 30 mins

	Mins	Secs
=	5	30
+	1	30
	6	60

or 7 : 00 p.m.

Hence, homework finishes at 7 : 00 p.m.

12. Time from Delhi to Agra = 7 hrs 40 mins

Time taken from Rajdhani express = 4 hrs 45 mins

Time saved by going to Rajdhani express =

	Mins	Secs
	~~7~~ ^{6}	~~40~~ $^{60+40=100}$
−	4	45
	2	55

Hence 2 hrs 55 mins are saved

12.2

1. a. 2 day 2 hours
   1 day = 24 hours
   2 days = 2 × 24 hrs = 48 hrs
   = 48 + 2 = 50 hours
   b. 7 days 10 hours
   7 days = 7 × 24 hrs = 168 hrs
   = 168 + 10 = 178 hours
   c. 1 week = 7 days
   7 days = 7 × 24 hrs = 168 hrs
   d. 2 week and 1 day
   1 week = 7 days
   2 weeks = 2 × 7 = 14 + 1 = 15 days
   1 day = 24 hrs
   15 days = 15 × 24 = 360 hrs
   e. 30 days and 15 hours
   1 day = 24 hours
   30 days = 30 × 24 = 720 + 15 hrs
   = 735 hrs
   f. 15 days 20 hrs
   15 days = 15 × 24 hrs = 360 hrs
   = 360 + 20 = 380 hrs
2. a. 261 hrs

1 days = 24 hrs
261 ÷ 24

$$\begin{array}{r} 24\overline{)261}\,10 \\ -24\downarrow \\ \hline 21 \\ 00 \\ \hline 21 \end{array}$$

= 10 days 21 hrs

b. 1020 hrs
1 days = 24 hrs
1020 ÷ 24

$$\begin{array}{r} 24\overline{)1020}\,42 \\ -96\downarrow \\ \hline 60 \\ -48 \\ \hline 12 \end{array}$$

= 42 days 12 hrs

c. 1411 hrs
1 days = 24 hrs
1411 ÷ 24

$$\begin{array}{r} 24\overline{)1411}\,58 \\ -120\downarrow \\ \hline 211 \\ -192 \\ \hline 19 \end{array}$$

= 58 days 19 hrs

d. 1000 hrs
1 days = 24 hrs
1000 ÷ 24

$$\begin{array}{r} 24\overline{)1000}\,41 \\ -96\downarrow \\ \hline 40 \\ -24 \\ \hline 16 \end{array}$$

= 41 days 16 hrs

e. 1250 hrs
1 days = 24 hrs
1250 ÷ 24

$$
\begin{array}{r}
24\overline{)1250}\,(52 \\
-\,120\downarrow \\
\hline
\quad 50 \\
-\,48 \\
\hline
\quad\;\; 2
\end{array}
$$

= 52 days 2 hrs

f. 1800 hrs

1 days = 24 hrs

1800 ÷ 24

$$
\begin{array}{r}
24\overline{)1800}\,(75 \\
-\,168\downarrow \\
\hline
\quad 120 \\
-120 \\
\hline
\quad\;\; 0
\end{array}
$$

= 75 days

3. a. 30th Jan. to 19th March

No. of days in Jan = 31 – 30 + 1 = 2
No. of days in Feb = 28
No. of days in March = 19
Total days = 2 + 28 + 19 = 49 days

b. 15th August to 20th October

No. of days in August = 31 – 15 + 1 = 17
No. of days in September = 30
No. of days in Oct = 20
Total days = 17 + 30 + 20 = 67 days

c. 15th Feb to 11th April 2023

No. of days in Feb = 28 – 15 + 1 = 14
No. of days in March = 31
No. of days in April = 11
Total days = 14 + 31 + 11 = 56 days

d. 24th June to 26th Sept

No. of days in June = 30 – 24 + 1 = 7
No. of days in July = 31
No. of days in August = 31
No. of days in Sept = 26
Total days = 7 + 31 + 31 + 26 = 95 days

4. After 3 year 4 months Mandeep will be = 21 years

Mandeep present age = 21 years - 3 year 4 month

	Years	Months
	21-1	00 + 12
–	3	4
	17	8

∴ Mandeep present age is 17 years 8 months

5. Andrew Return date 19th Jan to 1 Jan = 19 days
   31 Dec – 6 days 25 Dec

   ∴ he left on 25 Dec 2022 for the tour

6. Camp over on 3rd Dec to 1st Dec = 3 days
   30^{th} Nov to 13^{th} Nov = 18 – 3 = 21 days
   ∴ Iqbal join the camp on 13th Nov.

7. Starting date of summer vacation = 16 May
   Ending date of summer vacation = 5th July
   No. of holidays
   Days in May = 31 – 16 + 1 = 16
   Days in June = 30
   Days in July = 5
   Total days = 16 + 30 + 5 = 51 days

8. Joined the dance class on 20 June to 21st June = 10 days
   I^{st} July to 12 July = = 12 days
   = 10 + 12 = 22 days

   ∴ Harjot leave the class on 12^{th} July

9. Joining date of school = 5^{th} July 2023
   Leaving date of school = 26 Jan 2024
   Days studied in school =
   No. of days in July = 31 – 5 + 1 = 27
   No. of days in August = 31
   No. of days in Sept = 30
   No. of days in Oct = 31
   No. of days in Nov = 30
   No. of days in Dec = 31
   No. of days in Jan = 26
   Total days = 206

12.3

1. a. Clinical b. 100 c. 32 d. Temp
   e. Thermometer f. 37, 98.6

2. a. 37°C
   °F $= \frac{9}{5}$ °C + 32
   $= (\frac{9}{5} \times 37 + 32)$ °F
   $= (\frac{333}{5} + 32)$°F
   = 66.6 + 32 = 98.6 °F

   b. 40°C
   °F $= \frac{9}{5}$ °C + 32

$= \left(\frac{9}{5} \times 40 + 32\right)$ °F

$= \left(\frac{360}{5} + 32\right)$°F

$= (72+32) = 104$ °F

c. 45°C

°F $= \frac{9}{5}$ °C + 32

$= \left(\frac{9}{5} \times 45 + 32\right)$ °F

$= \left(\frac{405}{5} + 32\right)$°F

$= (81+32) = 113$ °F

d. 100°C

°F $= \frac{9}{5}$ °C + 32

$= \left(\frac{9}{5} \times 100 + 32\right)$ °F

$= \left(\frac{900}{5} + 32\right)$°F

$= (180+32)$°F $= 212$ °F

e. 300°C

°F $= \frac{9}{5}$ °C + 32

$= \left(\frac{9}{\cancel{5}_{1}} \times \cancel{300}^{60} + 32\right)$ °F

$= (540+32)$ °F $= 572$°F

3. a. 68°F

°C $= (°F - 32) \times \frac{5}{9}$

$= (68 - 32) \times \frac{5}{9}$ °C $= \cancel{36}^{4} \times \frac{5}{\cancel{9}_{1}}$ °C $= 20$°C

b. 86°F

°C $= (°F - 32) \times \frac{5}{9}$

$= (86 - 32) \times \frac{5}{9}$ °C $= \cancel{54}^{6} \times \frac{5}{\cancel{9}_{1}}$ °C $= 30$°C

c. 212°F

°C $= (°F - 32) \times \frac{5}{9}$

$= (212 - 32) \times \frac{5}{9}$ °C $= \cancel{180}^{20} \times \frac{5}{\cancel{9}_{1}}$ °C $= 100$°C

d. 104°F

°C $= (°F - 32) \times \frac{5}{9}$

$= (104 - 32) \times \frac{5}{9}$ °C $= \overset{8}{\cancel{72}} \times \frac{5}{\cancel{9}_{1}}$ °C = 40°C

e. 149°F

°C $= (°F - 32) \times \frac{5}{9}$

$= (149 - 32) \times \frac{5}{9}$ °C $= \overset{13}{\cancel{117}} \times \frac{5}{\cancel{9}_{1}}$ °C = 65°C

Revision

1. a. 37 °C b. 2100 hrs c. 113 °F d. 9 : 45 a.m.
   e. 100 f. °C
2. a. $10\frac{1}{2}$ mins into seconds
   1 min = 60 seconds
   10 mins 30 sec = 10 × 60 + 30
   = 600 sec + 30 sec = 630 sec
   b. 500 mins into hrs and mins
   1 hrs = 60 mins
   500 ÷ 60 = 8 hrs 20 mins
3. No. of hrs jogged on Friday = $1\frac{1}{2}$ = 90 mins
   No. of hrs jogged on Saturday = 95 mins
   She jogged longer on Saturday by 5 mins.
4. a.

Hrs	Mins
3	25
+	45
3	70
+ 1	-60
4	10

   = 4 hrs 10 mins

   b.

Hrs	Mins
$\cancel{4}^{3}$	$\cancel{3}$ 3 + 12 = 15
− 2	5
1	10

   = 1 year 10 months
5. a. 2 hrs 20 mins after 11: 45 a.m.
   = 02 : 05 p.m.
   b. 4 hrs 50 mins before 7 : 20 p.m.
   = 2 : 30 p.m.
6 a. 13 days after 28th October
   = 10 November
   b. 25 days before 16th June

= 22 May

7. Boiling temp of water = 100 °C
= 100 °C – 18 °C = 82 °C

13.1

1. a. Perimeter b. 3 c. 20 cm
2. a. Perimeter of triangle = Sum of its three side
= 15 cm + 18 cm + 30 cm = 63 cm
b. Perimeter of triangle = Sum of its three side
= 20 cm + 15 cm + 11 cm = 46 cm
c. Perimeter of triangle = Sum of its three side
= 12 cm + 21 cm + 12 cm = 45 cm
3. a. Perimeter = 2 (l + b)
= 2 (6.2 + 4.8) = 2 × 11 = 22 cm
b. Perimeter = 2 (l + b)
= 2 (15 + 10) = 2 × 25 = 50 cm
c. Perimeter = 2 (l + b)
= 2 (2.3 + 1.2) = 2 × (3.5) = 7 cm
d. Perimeter = 2 (l + b)
= 2 (16+ 8) = 2 × 24 = 48 cm
4. a. Side = 16 cm
Perimeter = 4 × side = 4 × 16 cm = 64 cm
b. Side = 4.8 cm
Perimeter = 4 × side = 4 × 4.8 cm = 19.2 cm
c. Side = 25 cm
Perimeter = 4 × side = 4 × 25 cm = 100 cm
d. Side = 30 cm
Perimeter = 4 × side = 4 × 30 cm = 120 cm
5. Perimeter of triangular plot = 8 + 15 + 12 = 35 m
6. Length = 36 m
Breadth = 24 m
Length of the boundary = Perimeter of rectangular garden
Perimeter = 2 (l + b)
= 2 (36 + 24) = 2 × 60 = 120 m
7. Side = 15.5 m
Distance covered in 1 round = Perimeter of square park
Perimetr of square park = 4 × side
= 4 × 15.5 m = 62.0 m
Distance covered in 1 round = 62 m
Distance covered in 5 round = 62 × 5 = 310 m
8. Perimeter of triangle = Sum of its three side
= 9 + 9 + 7 = 25 cm

13.2

1. a. $l = 18$ cm b = 12 cm
   Area = l × b = 18 × 12 = 216 cm^2
   b. $l = 14$ cm b = 9 cm
   Area = l × b = 1400 × 9 = 12600 cm^2
   c. $l = 56$ cm b = 8.5 cm
   Area = l × b = 56 × 8.5 = 476 cm^2
   d. $l = 27.5$ cm b = 16 cm
   Area = l × b = 27.5 × 16 = 440 cm^2
   e. $l = 1.8$ m b = 80 cm
   Area = l × b = (1.8 × 100) cm × 80 = 180 cm × 80 = 14400 Sq c.m
   f. $l = 2$ m 50 cm b = 60 cm
   Area = l × b = 2 m 50 cm × 60 cm =
   = 250 cm × 60 cm = 15000 cm^2
2. a. Area = side × side
   = 19 × 19 = 361 cm^2
   b. Area = side × side
   = 33 × 33 = 1089 m^2
   c. Area = side × side
   = 16.5 × 16.5 = 272.25 cm^2
   d. Area = side × side
   = 440 × 440 = 193600 cm^2
3. a. Area = 104 cm^2 Breadth = 8 cm
   Area = l × b
   104 = l × 8
   $l = \frac{104}{8} = 13$ cm
   b. Area = 378 m^2 Breadth = 14 m
   Area = l × b
   378 = l × 14
   $l = \frac{378}{14} = 27$ m
   c. Area = 900 cm^2 Breadth = 25 cm
   Area = l × b
   900 = l × 25
   $l = \frac{900}{25} = 36$ cm
   d. Area = 102 m^2 Breadth = 8.5 m
   Area = l × b
   102 = l × 8
   $\frac{102}{8.5} = l$ $l = 12$ m
4. a. Area = 208 sq cm and length = 16 cm
   Area = l × b
   208 = 16 × b

b $= \frac{208}{16} = 13$ cm

b. Area = 391 sq cm and length = 23 cm

Area $= l \times b$

$391 = 23 \times b$

$b = \frac{391}{23} = 17$ cm

c. Area = 117 m^2 and length = 13 m

Area $= l \times b$

$117 = 13 \times b$

$b = \frac{117}{13} = 9$ m

d. Area = 52 m^2 length = 8 m

Area $= l \times b$

$52 = 8 \times b$

$\frac{52}{8} = b$ b = 6.5 m

5. Length of carpet = 4 m
Breadth of carpet = 2.5 m
Area covered by one carpet = $4 \times 2.5 = 10.0$ m^2
Area covered by 26 carpet = $26 \times 10 = 260$ m^2

6. Area of first carpet = $16 \times 12.5 = 200$ m^2
Area of second carpet = $15 \times 13.8 = 207$ m^2
Second carpet is bigger than first carpet

7. Area of one block = $l \times b$
$= 25 \times 12 = 300$ cm^2
Area of path = $l \times b$ $= 12.5 \times 4.8$
$= 60$ m^2
$= 6$ or $\times 100 \times 100$ cm^2
$= 600000$ cm^2
No. of block $= \frac{\text{Area of Path}}{\text{Area of one block}}$
$= \frac{600000}{300} = 2000$ blocks

$\therefore$ 2000 block will be required to lay a path.

8. Area of one stone slab = $l \times b$
$= 24 \times 15 = 360$ cm^2
Area of path = $l \times b$ $= 18 \times 12$
$= 216$ m^2
$= 216 \times 100 \times 100$ cm^2
$= 2160000$ cm^2
No. of stone slabs $= \frac{\text{Area of Path}}{\text{Area of each slab}}$
$= \frac{2160000}{360} = 6,000$ stone slabs

$\therefore$ 6,000 stone slabs will be required to lay a path.

13.3

1. a. Volume of cuboid $= l \times b \times h$
$= 12 \times 8 \times 10 = 960 \text{ cm}^3$

   b. Volume of cuboid $= l \times b \times h$
$= 9 \times 12 \times 15 = 1620 \text{ cm}^3$

   c. Volume of cuboid $= l \times b \times h$
$= 10 \times 20 \times 16 = 3200 \text{ cm}^3$

   d. Volume of cuboid $= l \times b \times h$
$= 4.3 \times 2.9 \times 0.8 = 9.976 \text{ cm}^3$

2. a. Volume of cube $= \text{side}^3$
$= 10 \times 10 \times 10 = 1000 \text{ cm}^3$

   b. Volume of cube $= \text{side}^3$
$= 3.5 \times 3.5 \times 3.5 = 42.875 \text{ cm}^3$

   c. Volume of cube $= \text{side}^3$
$= 40 \times 40 \times 40 = 64000 \text{ cm}^3$

   d. Volume of cube $= \text{side}^3$
$= 0.9 \times 0.9 \times 0.9 = 0.729 \text{ cm}^3$

3. a. Volume of brick $= l \times b \times h$
$= 28 \times 20 \times 15 = 8400 \text{ cm}^3$

   b. Volume of box $= l \times b \times h$
$= 3.5 \times 1.5 \times 2 = 10.5 \text{ cm}^3$

   c. Volume of wooden plank $= l \times b \times h$
$= 4.8 \times 2.8 \times 1.5 = 20.16 \text{ cm}^3$

   d. Volume of each book $= l \times b \times h$
$= 30 \times 28 \times 25 = 21{,}000 \text{ cm}^3$
Volume of 3 books $= 21{,}000 \times 3 = 63{,}000 \text{ cm}^3$

   e. Volume of water tank $= l \times b \times h$
$= 30 \times 25 \times 15 = 11{,}250 \text{ cm}^3$

Revision

1. b. Volume of cube $= \text{side}^3$
$= 6 \times 6 \times 6 = 216$ cu.cm

2. d. Volume of cube $= \text{side}^3 = 6 \times 6 \times 6 = 216$ cu.cm
Volume of one small cube $= \text{side}3 = 2 \times 2 \times 2 = 8$ cu.cm
No. of small cubes $= \dfrac{\text{Volume of cube}}{\text{Volume of small cube}}$
$= \dfrac{216}{8} = 27$

3. b. Volume of cube $= \text{side}^3 = 12 \times 12 \times 12 = 1728 \text{ m}^3$
Volume of cuboid $= l \times b \times h = 8 \times 6 \times 4 = 192 \text{ m}^3$
$= \dfrac{1728}{192} = 9$ times

4. b. Volume of cuboid = $l \times b \times h = 36 \times 24 \times 18 = 15{,}552\ m^3$

Volume of cube = side^3 $= 6 \times 6 \times 6 = 216\ m^3$

No. of cuboids $= \frac{15{,}552}{216} = 72$

5. c. Volume of ice- cube = side^3 $= 2^3 = 8\ cm^3$

Volume of icebox $= 4 \times 4 \times 4 = 64\ cm^3$

No. of ice-cubes $= \frac{64}{8} = 8$

6. d. Volume of box $= l \times b \times h = 5 \times 10 \times 6 = 300\ m^3$

7. d. Volume of cuboid $= 2.5\ m^3$

Volume of cube $= 2.5 \times 100 \times 100 \times 100 = 2500000$

8. c. Volume of cube = side^3 $= 10 \times 10 \times 10 = 1000\ cm^3$

Volume of cubical = side^3 $= 80 \times 80 \times 80 = 512000\ cm^3$

No. of cubes $= \frac{512000}{1000} = 512$

9. d. Volume of cubical box = side^3 $= 160 \times 160 \times 160 = 4096000\ cm^3$

Volume of cubical packet $= 8 \times 8 \times 8 = 512\ cm^3$

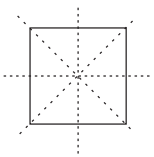
No. of packets $= \frac{4096000}{512} = 8000$

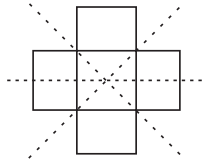
10. b. Volume of Box A $= l \times b \times h = 10 \times 6 \times 4 = 240\ cm^3$

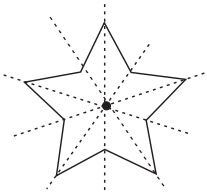
Volume of Box B $= l \times b \times h = 6 \times 6 \times 7 = 252\ cm^3$

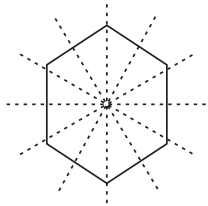
Hence volume of box B is greater than volume of Box A

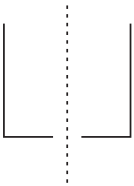
14.1

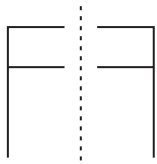
1. a. 

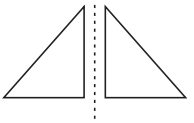
b. 

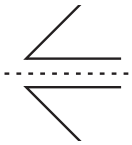
c. 

d. 

2. a. 

b. 

c. 

d. 

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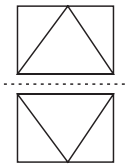
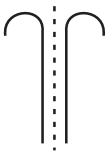
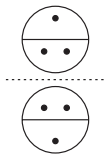
f. 

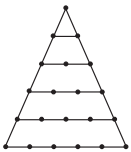
g. 

h. 

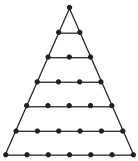
3-4 Do it yourself

14.2

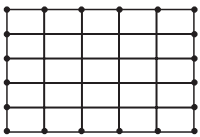
1. a. 5, 11, 17, 23, 29
   b. 13, 27, 41, 55, 69
2. a. 21 = 1 + 2 + 3 + 4 + 5+ 6

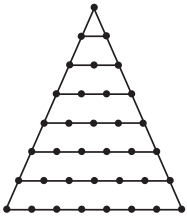


   b. 28 = 1 + 2 + 3 + 4 + 5+ 6 + 7



3. 1, 36
4. 121, 144, 169, 196
5. 6 × 6 = 36





1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 = 36

6. a. $1234 \times 8 + 4 = 9876$
   $12345 \times 8 + 4 = 98765$
   a. $9876 \times 9 + 4 = 88888$
   $98765 \times 9 + 3 = 888888$

14.3

1. d.
2. a. cube b. cylinder c. cuboid d. cone
3. a. Cuboid - Bricks, geometry box, books etc.
   b. Cylinder - Dustbin, bucket, cell, pencil etc.
   c. Cube - Ice cube, rubik cube, dice etc.
   d. Cone - Ice cream cone, birthday cap, christmas tree, carrot etc.

Revision

1. a. Do it yourself
2. a.  b.  c. 
3. a. $\frac{1}{64}, \frac{1}{128}$
   b. 100000, 1000000
4. 
5. a. (iii) b. (iv) c. (i) d. (ii)

15.1

1.

Marks obtained	Tally marks	Frequency
12	II	2
18	𝍸	5
20	III	3
36	III	3
43	III	3
45	IIII	4

2.

Blood groups	Tally marks	Frequency
A	𝍸	5
B	𝍸 I	6
AB	𝍸 I	6
O	𝍸 III	8

3. a.

Marks	Tally marks	Frequency
16	𝍸	3
20	𝍸𝍸	7
30	𝍸𝍸𝍸	8
35	𝍸𝍸	6
36	𝍸𝍸	5
40	𝍸	2
45	𝍸𝍸	5

b. Ascending order= 16, 16, 16, 20, 20, 20, 20, 20, 20, 20, 30, 30, 30, 30, 30, 30, 30, 35, 35, 35, 35, 35, 35, 35, 36, 36, 36, 36, 36, 40, 40, 45, 45, 45, 45, 45

c. Lowest mark = 16

d. Total students = 36

e. Highest mark = 45

f. Students scored the highest mark = 5

g. Students scored below 20 = 3

4. a.

No. of children	Tally marks	Frequency
1	𝍸𝍸	9
2	𝍸𝍸	8
3	𝍸	3

b. 1 children c. 9 d. 3

15.2

1. a. scale b. 15 c. width d. 𝍸𝍸

2-3. Do it yourself

4. a. sports b. News c. 800 d. 400

Revision

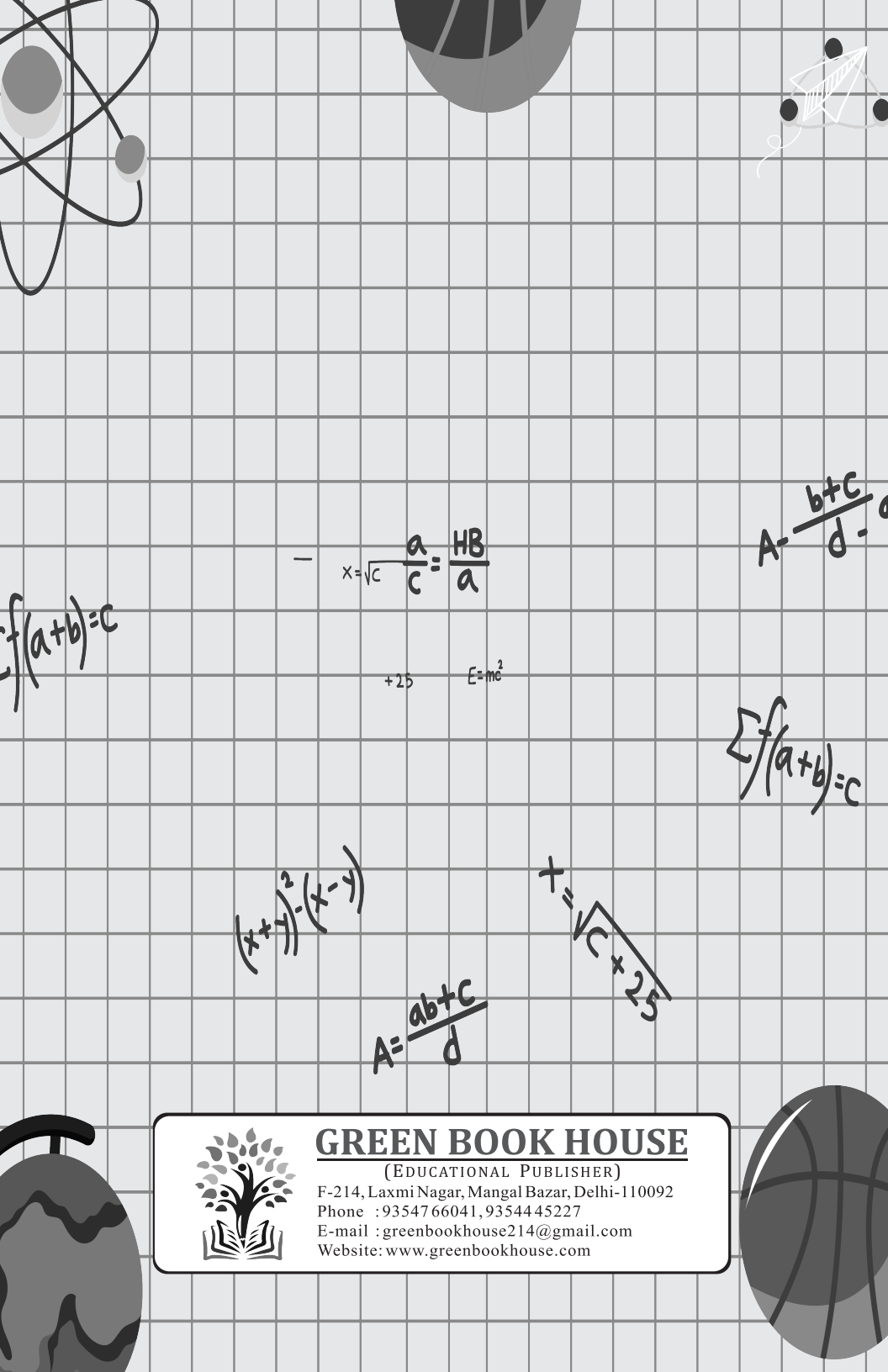
1.

Snack	Tally marks	No.s
Burger	𝍸	7
Samosa	𝍸𝍸𝍸	15
Sandwich	𝍸𝍸𝍸	15
chips	𝍸𝍸𝍸𝍸	20

a. chips b. burgers c. Samosa and Sandwich

d. 5 e. 57

2-3. Do it yourself



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