Timax®

Maths Magic

NEP 2020
ENHANCED EDITION

Teacher Manual

5

MATHS
CLASS 5

CHAPTER 01

Ex. 1.1

1. (a) Eighty six lakh forty two thousand nine hundred twelve

(b) Seventy two lakh ninety two thousand eight hundred twenty five

(c) Thirty four lakh twenty six thousand four

(d) Seven crore five lakh ninety two thousand one hundred

(e) Nine crore six lakh six thousand six

2. (a) 10,000 (b) Smallest (c) 1 (d) 999999

(e) 10 (f) 20 (g) 1 (h) 10

(i) 100 (j) 100

3. (a) 2,48,50,242

Two core forty eight lakh fifty thousand two hundred forty two.

(b) 46235

Forty six thousand two hundred thirty five.

(c) 32,06,45,107

Thirty two crore six lakh forty five thousand one hundred seven.

(d) 2,90,345

Two lakh ninety thousand three hundred forty five.

4.

	Crores	Lakhs		Thousands			Ones	
	C	TL	L	T-Th	Th	H	T	O
(a)				2	5	6	8	5
(b)			9	7	6	3	0	4
(c)				9	7	0	4	8
(d)			5	8	5	3	7	5
(e)				8	9	0	7	0
(f)		1	2	7	0	0	0	7
(g)	4	2	4	6	5	3	6	2
(h)			5	5	0	0	5	5

5. (a) 86,987 (b) 42,92,422 (c) 6,08,11,335 (d) 93,61,94,800
(e) 44,02,07,128

6. (a) 8,12,435 (b) 9,20,680 (c) 7,49,214 (d) 99,99,999
(e) 2,87,591 (f) 83,41,576 (g) 2,56,81,768 (h) 93,21,473

7. (a) 18,245

Eighteen thousand two hundred forty five

(b) 6,29,793

Six lakh twenty nine thousand seven hundred ninety three

(c) 4,58,217

Four lakh fifty eight thousand two hundred seventeen.

(d) 92,85,320

Ninety two lakh eighty five thousand three hundred twenty.

(e) 14,92,176

Fourteen lakh ninety two thousand one hundred seventy six.

(f) 29,28,750

Twenty nine lakh twenty eight thousand seven hundred fifty.

(g) 8,34,97,607

Eight crore thirty four lakh ninety seven thousand six hundred seven.

(h) 48,25,70,085

Forty eight crore twenty five lakh seventy thousand eighty five.

Ex. 1.2

1. (a) $7000000 + 500000 + 40000 + 8000 + 6000 + 20 + 1 = 7548621$

(b) $5 \times 100000 + 6 \times 10000 + 3 \times 1000 + 9 \times 100 + 2 \times 10 + 3 = 563923$

(c) $4TTH + 9TH + 6H + 9T + 50 = 49675$

(d) $76091 = 7 \times 10000 + 6 \times 1000 + 9 \times 10 + 1$

(e) $625943 = (6 \times 100000) + (2 \times 10000) + (5 \times 1000) + (9 \times 100) + (4 \times 10) + 3$

(f) 972853 = 9 Lakhs + 7ten thousands + 2 thousands + 8 hundreds + 5tens + 3 ones

(g) $92076 = 9 \times 10000 + 2 \times 1000 + 7 \times 10 + 6$

(h) 85679 = 8ten thousands + 5 thousands + 6 hundreds + 7tens + 9 ones.

2. (a) $57962 = 50000 + 7000 + 900 + 60 + 2$

(b) $32145 = 30000 + 2000 + 100 + 40 + 5$

(c) $90216 = 90000 + 200 + 10 + 6$

(d) $42073 = 40000 + 2000 + 70 + 3$

(e) $921106 = 900000 + 20000 + 1000 + 100 + 6$

(f) $835340 = 800000 + 30000 + 5000 + 300 + 40$

(g) $3124364 = 3000000 + 100000 + 20000 + 4000 + 300 + 60 + 4$

(h) $8006972 = 8000000 + 6000 + 900 + 70 + 2$

(i) $3000762 = 3000000 + 700 + 60 + 2$

(j) $3939239 = 3000000 + 900000 + 30000 + 9000 + 200 + 30 + 9$

3. (a) 87281 (b) 70517 (c) 835406 (d) 216048
(e) 5432856

4. (a) 34③642 (b) 8947⑧6 (c) 4646④66 (d) 8④32164
(e)⑦8643214

5.

5	Place Value	Face Value
(a)	5000	5
(b)	90000	9
(c)	700	7
(d)	300000	3
(e)	800	8
(f)	90000	9
(g)	5000000	5
(h)	800	8

6.

	Crores		Lakhs		Thousands				Ones	
	C		TL	L	T-Th	Th	H	T		O
(a)		7		8	4	5	7	3	1	
(b)					8	0	3	1	6	
(c)				9	0	0	4	5	1	
(d)		1		8	5	2	2	0	3	
(e)		6		3	5	6	2	9	1	
(f)	5	9		8	3	0	7	4	2	

Ex. 1.3

1. (a) 4475309
Successor - 4475310 Predecessor - 4475308
(b) 45681217
Successor - 45681218 Predecessor - 45681216

(c) 282431207

Successor - 282431208 Predecessor - 282431206

2. (a) > (b) > (c) > (d) >

3. (a) 7036125 < 425629385 < 425921385 < 534425662 < 564120105

(b) 15641219 < 24856105 < 32932380 < 46200318 < 54934315

(c) 288573281 < 295570189 < 461928179 < 547281369 < 622930905

4. (a) 5547201 > 5349152 > 4962321 > 4850304 > 4256629

(b) 5005050 > 4759950 > 4040004 > 3620195 > 3549257

(c) 43516396 > 39619927 > 26040216 > 16529615 > 9591290

5. (a) 2, 7, 6, 8, 5, 9

Smallest numeral - 256789

Largest numeral - 987652

(b) 3, 1, 0, 2, 8, 7, 4

Smallest numeral - 1023478

Largest numeral - 8743210

(c) 5, 8, 3, 2, 6, 1, 0

Smallest numeral - 1023568

Largest numeral - 8653210

(d) 8, 7, 6, 4, 3, 2, 5, 0

Smallest numeral - 20345678

Largest numeral - 87654320

(e) 2, 3, 9, 6, 7, 4, 5, 8

Smallest numeral - 23456789

Largest numeral - 98765432

(f) 8, 1, 7, 9, 3, 6, 4, 5

Smallest numeral - 13456789

Largest numeral - 98765431

Beat the Clock

1. 9765210 **2.** 9765209 **3.** 1025679 **4.** 7965210

Ex. 1.4

1. (a) 8000 (b) 3000 (c) 4000 (d) 25000
(e) 1000 (f) 24000

2. (a) 96800000 (b) 2300000 (c) 21100000
(d) 2000000 (e) 56500000 (f) 80200000

3. (a) 15 years (b) 2800000 (c) 5000 (d) ₹ 200

4. Smallest - 4500 Greatest - 5499

Sum up

1. (a) 74995, 75095, 75195 (b) 90306, 91306, 92306
(c) 40805, 39805, 38805 (d) 59918, 59818, 59718

2. (a) ₹ 700 (b) ₹ 900 (c) ₹ 3400 (d) ₹ 9100
(e) 3100 km (f) 400 m (g) 600 m (h) 2500 m
(i) 400 g (j) 900 kg (k) 300 l (l) 800 ml

3.

	Smallest	Greatest Numbers
(a)	9012	79024
(b)	42016	46102
(c)	30721	31021
(d)	85769	85976

4. (a) 1187, 1189, 11875, 11895
(b) 12347, 21347, 34712, 74312
(c) 45027, 45270, 45702, 45720
(d) 80237, 82037, 82307, 82370

CHAPTER 02

Mental Maths

A 1. 46 2. 70 3. 903 4. 111

B 1. 62 3. 12

Ex. 2.1

1. (a)
$$\begin{array}{r} 5436289 \\ +\ 2738412 \\ \hline 8174701 \end{array}$$

(b)
$$\begin{array}{r} 51487 \\ 456 \\ +\ 239601 \\ \hline 291544 \end{array}$$

(c)
$$\begin{array}{r} 54567 \\ 45765 \\ +\ 12635 \\ \hline 112967 \end{array}$$

(d)
$$\begin{array}{r} 287635 \\ +\ 1198 \\ \hline 288833 \end{array}$$

2. (a)
$$\begin{array}{r} 20106 \\ -\ 15302 \\ \hline 04804 \end{array}$$

(b)
$$\begin{array}{r} 347900 \\ -\ 197637 \\ \hline 150263 \end{array}$$

(c)
$$\begin{array}{r} 60000 \\ -\ 41901 \\ \hline 18099 \end{array}$$

(d)
$$\begin{array}{r} 30000 \\ -\ 18603 \\ \hline 11397 \end{array}$$

3. (a)
$$\begin{array}{r} 2375289 \\ +\ 4087492 \\ \hline 6462781 \end{array}$$

(b)
$$\begin{array}{r} 3320297 \\ +\ 9615150 \\ \hline 12935447 \end{array}$$

(c)
$$\begin{array}{r} 52125 \\ -\ 42021 \\ \hline 10104 \end{array}$$

(d)
$$\begin{array}{r} 7364101 \\ -\ 4621060 \\ \hline 2743041 \end{array}$$

Ex. 2.1

1. (a) 123454321, 12345654321, 1234567654321

(b) 1344431, 13444431, 134444431, 1344444431

(c) 4488844, 44888844, 448888844, 4488888844

2. (a) 748
× 83
2244
59840
62084

(b) 960
× 605
4800
0000
576000
580800

(c) 1425
× 724
5700
28500
997500
1031700

(d) 8424
× 643
25272
336960
5054400
5416632

(e) 3162
× 545
15810
126480
1581000
1723290

(f) 6512
× 823
19536
130240
5209600
5359376

(g) 1289
× 421
1289
25780
515600
542669

(h) 498
× 849
4482
19920
398400
422802

(i) 983
× 412
1966
9830
393200
404996

(j) 216
× 743
648
8640
151200
160488

(k) 982
× 848
7856
39280
39280
785600
832736

(l) 7589
× 155
37945
37945
379450
758900
1176295

Ex. 2.3

1. (a) 3780 ÷ 92

41
92) 3780
368
0100
92
8

Verification
Dividend = Divisor × Quotient + Remainder
= (92 × 41) + 8
= 3772 + 8
= 3780 (Dividend)

$Q = 41$ $R = 8$

(b) 87631 ÷ 371

236
371) 87631
742
1343
1113
02301
2226
0075

Verification
Dividend = Divisor × Quotient + Remainder
= (371 × 236) + 75 = 87556 + 75
= 87631 (Dividend)

$Q = 236$ $R = 75$

(c) $47348 \div 36$

$$
\begin{array}{r}
13\ 15 \\
36\overline{)47348} \\
\underline{36} \\
113 \\
\underline{108} \\
0054 \\
\underline{36} \\
188 \\
\underline{180} \\
8
\end{array}
$$

Verification

Dividend = Divisor × Quotient + Remainder

$= 36 \times 1315 + 8 = 47340 + 8$

$= 47348$ (Dividend)

$Q = 1315\ R = 8$

(d) $4036792 \div 258$

$$
\begin{array}{r}
15646 \\
258\overline{)4036792} \\
\underline{258} \\
1456 \\
\underline{1290} \\
1667 \\
\underline{1548} \\
01199 \\
\underline{1032} \\
01672 \\
1548 \\
\underline{124}
\end{array}
$$

Verification

Dividend = Divisor × Quotient + Remainder

$= 258 \times 15646 + 124$

$= 4036792$ (Dividend)

$Q = 15646\ R = 124$

(e) $262907 \div 403$

$$
\begin{array}{r}
652 \\
403\overline{)262907} \\
247
\end{array}
$$

$$
\begin{array}{r}
652 \\
403\overline{)262907} \\
2418 \\
02110 \\
2015 \\
00957 \\
806 \\
\hline
151
\end{array}
$$

Verification

Dividend = Divisor × Quotient + Remainder

$= (403 \times 652) + 151 = 262756 + 151$

$= 262907$ (Dividend)

$Q = 652 \quad R = 151$

2. (a) Dividend = 2971677 (b) $Q = 5263$, $R = 12$

(c) $Q = 603$, $R = 188$

Ex. 2.4

1. Oil in one tanker = 500 l

$\therefore$ oil in 35 tankers $= 35 \times 500 = 17500$ l

Number of buckets required to fill 1 tank = 25

$\therefore$ Number of buckets required to fill 35 tanks $= 25 \times 35$

$$
\begin{array}{r}
25 \\
\times 35 \\
\hline
125 \\
750 \\
\hline
875
\end{array}
$$

$\therefore$ 875 buckets are required to fill 35 tankers and total capacity of 35 tankers is 17500 l.

2. Pens required in 1 year = 32,400

Number of boxes of 50 pens required = $32400 \div 50$

$$
\begin{array}{r}
648 \\
50\overline{)32400} \\
300 \\
240 \\
200
\end{array}
$$

$$\begin{array}{r} 0400 \\ 400 \\ \hline 00 \end{array}$$

$\therefore$ 648 boxes will be required.

3. Capacity of 1 bus = 54 passengers.

Passengers in 275 buses = 275×54

$$\begin{array}{r} 275 \\ \times 54 \\ \hline 1100 \\ 13750 \\ \hline 14850 \end{array}$$

$\therefore$ 14850 passengers can be accommodated in 275 buses.

4. (a) Cost of 1 note book = ₹ 72

$\therefore$ cost of 32 note books = $72 \times 32 =$ ₹ 2304

32 note books cost ₹ 2304

(b) Cost of 45 note books = 72×45

= ₹ 3240

$\therefore$ 45 note books cost ₹ 3240

5. Toys on 1 shelf = 23

$\therefore$ Toys on 25 shelves = $23 \times 25 = 575$ toys

There are 575 toys on 25 shelves

Toys on 8 shelves = $23 \times 8 = 184$ toys

184 toys are required for decoration.

6. Students in 1 class = 35

Students in H sections = $35 \times 4 = 140$ students

$\therefore$ students in 12 classes (4 section in 1 class) = 140×12

= 1680 students.

$\therefore$ There are 1680 students in the school.

7. Number of note books in 36 boxes = 900

$\therefore$ Books in each box = $900 \div 36$

$$
\begin{array}{r}
25 \\
36\overline{)900} \\
72 \\
\underline{180} \\
180 \\
\underline{000}
\end{array}
$$

∴ There are 25 note books in each box.

8. Reading of odometer when Piyush started the journey = 36,819

Distance travelled = 3467

Present reading of odometer = 40286

$$
\begin{array}{r}
36819 \\
+\ 3467 \\
\hline
40286
\end{array}
$$

∴ Present reading of odomoter is 40286 km

Sum up

1. (a) (iii) (b) (iii) (c) (i) (d) (iii)

2. (a) $\begin{array}{r} 32497 \\ +\ 11310 \\ \hline 43807 \end{array}$ (b) $\begin{array}{r} 32982 \\ +\ 20350 \\ \hline 53332 \end{array}$

(c) $\begin{array}{r} 23475 \\ -\ 3695 \\ -\ 17205 \\ \hline 02575 \end{array}$ (d) $\begin{array}{r} 50386 \\ -\ 38427 \\ \hline 11959 \end{array}$

3. (a) $\begin{array}{r} 345 \\ \times\ 83 \\ \hline 1035 \\ 27600 \\ \hline 28635 \end{array}$ $\begin{array}{r} 948 \\ \times\ \mathbf{333} \\ \hline 2844 \\ 28440 \\ 284400 \\ \hline 315684 \end{array}$ $\begin{array}{r} 5482 \\ \times\ 398 \\ \hline 43856 \\ 493380 \\ 1644600 \\ \hline 2181836 \end{array}$

4. (a) 65550 ÷ 25

$$
\begin{array}{r}
2622 \\
25\overline{)65550} \\
50 \\
155
\end{array}
$$

150 Verification

55 Dividend = Divisor × Quotient + Remainder

50 = 25 × 2622 + 0 = 65550 + 0 = 65550

50

50

0

$Q = 2622$ $R = 0$

(b) 5476 ÷ 23

238 Verification

23 ⟌5476 Dividend = Divisor × Quotient + Remainder

46 = 23 × 238 + 2 = 5474 + 2

087 = 5476 (Dividend)

69

186

184

2

$Q = 238$; $R = 2$

(c) 77219 ÷ 35

2206 Verification

35 ⟌77219 Dividend = Divisor × Quotient + Remainder

70 = 35 × 2206 + 9 = 77210 + 9

072 = 77219 (Dividend)

70

219

210

9

$Q = 2206$; $R = 9$

5. (a) 42896

– 11245

31651

31651 should be subtracted from 42,896 to get 11245

(b) 983

361) 354863

3249

02996

2888

01083

1083

0000

∴ The other number is 983

6. Height of building in New York = 16937

Height of building in Chicago = 17384

17384

– 16937

00447

The building in chicago is 447 feet high

CHAPTER 03

Ex. 3.1

1. 18, 20, 22, 24, 26, 28

2. 43, 45, 47, 49, 51, 53, 55, 57, 59

3. (a) 181

The number formed by last two digits i.e. 81 is not divisible by 4

∴ 181 is not divisible by 4

(b) 372

The number formed by last two digits i.e. 72 is divisible by 4

$\therefore$ 372 is divisible by 4

(c) 440

The number formed by last two digits i.e. 40 is divisible by 4

$\therefore$ 440 is divisible by 4

(d) 956

The number formed by last two digits i.e. 56 is divisible by 4

$\therefore$ 956 is divisible by 4

(e) 569

The number formed by last two digits i.e. 69 is not divisible by 4

$\therefore$ 569 is not divisible by 4.

4. 744, 2460, 10110

(All these numbers are divisible by both 2 and 3. So they are divisible by 6 also)

5. 200, 9888, 4864, 10352

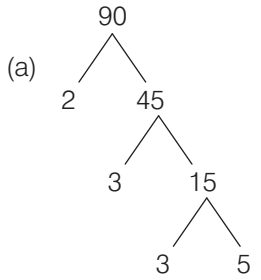
(The number formed by the last three digits in all these numbers is divisible by 8. So, these numbers are divisible by 8)

6. 500, 7010, 1000

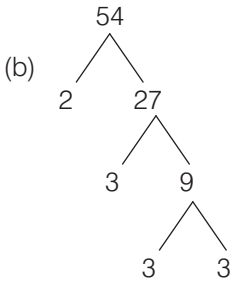
(The last digit in all these numbers is zero. So all these numbers are divisible by 10)

Ex. 3.2

1.

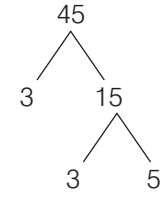


$90 = 2 \times 3 \times 3 \times 5$



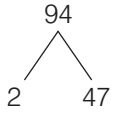
$54 = 2 \times 3 \times 3 \times 3$

(c)



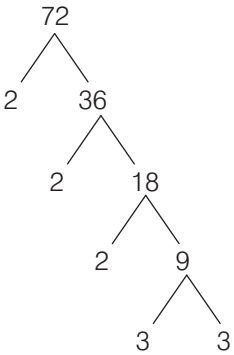
$45 = 3 \times 3 \times 5$

(d)



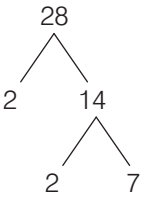
$94 = 2 \times 47$

(e)



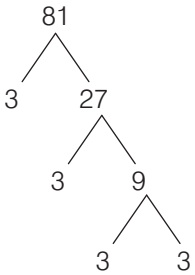
$72 = 2 \times 2 \times 2 \times 3 \times 3$

(f)



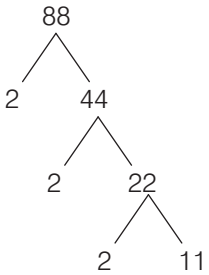
$28 = 2 \times 2 \times 7$

(g)



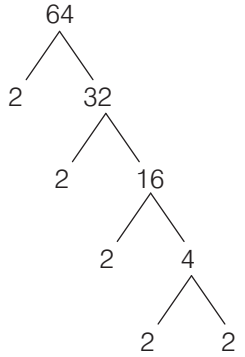
$81 = 3 \times 3 \times 3 \times 3$

(h)

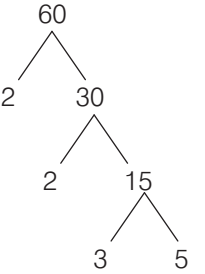


$88 = 2 \times 2 \times 2 \times 11$

(i)



(j)



$64 = 2 \times 2 \times 2 \times 2 \times 2 \times 2$

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

2. (a) 210

2	210
3	105
5	35
7	7
	1

(b) 160

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

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

$160 = 2 \times 2 \times 2 \times 2 \times 2 \times 5$

(c) 100

2	100
2	50
5	25
5	5
	1

(d) 216

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

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

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

(e) 480

2	480
2	240
2	120
2	60
2	30
3	15
5	5
	1

$480 = 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 5$

3. 57, 71, 73, 79 **4.** 59, 61

5. 42, 44, 45, 46, 48, 49, 50, 51, 52, 54

6. 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37

7. 81, 82, 84, 85, 86, 87, 88 **8.** 97

Beat the Clock

2 - Prime

3 - Prime

4 - Composite

5 - Prime

6 - Composite

7 - Prime

8 - Composite

Ex. 3.3

1. (a) 18, 54, 42

$18 = 2 \times 3 \times 3$

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

$42 = 2 \times 3 \times 7$

L.C.M. $= 2 \times 3 \times 3 \times 3 \times 7 = 378$

(b) 16, 24

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

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

L.C.M. $= 2 \times 2 \times 2 \times 2 \times 3 = 48$

(c) 38, 72

$38 = 2 \times 19$

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

(d) 10, 15

$10 = 2 \times 5$

$15 = 3 \times 5$

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

$= 2 \times 19 \times 2 \times 2 \times 3 \times 3 = 1368$

(e) 13, 52

$13 = 13$

$52 = 2 \times 2 \times 13$

L.C.M. $= 13 \times 2 \times 2 = 52$

(f) 20, 40, 45

$20 = 2 \times 2 \times 5$

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

$45 = 3 \times 3 \times 5$

L.C.M. $= 2 \times 2 \times 5 \times 2 \times 3 \times 3 = 360$

(g) 12, 15

$12 = 2 \times 2 \times 3$

$15 = 3 \times 5$

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

(h) $15 = 3 \times 5$

$20 = 4 \times 5$

$25 = 5 \times 5$

L.C.M. $= 5 \times 3 \times 4 \times 5 = 300$

(i) 96, 48

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

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

L.C.M. $= 2 \times 2 \times 2 \times 2 \times 2 \times 3 = 96$

2. (a) 12, 20, 25

2	12, 20, 25
2	6, 10, 25
3	3, 5, 25
5	1, 5, 25
5	1, 5
	1 1

L.C.M. $= 2 \times 2 \times 3 \times 5 \times 5 = 300$

(b) 8, 10, 24

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

L.C.M. $= 2 \times 2 \times 2 \times 3 \times 5 = 120$

(c) 18, 27, 54

3	18, 27, 54
3	6, 9, 18
2	2, 3, 6
3	1, 3, 3
	1 1

L.C.M. $= 3 \times 3 \times 2 \times 3 = 54$

(d) 3, 9, 27, 18

3	3, 9, 27, 18
3	1, 3, 9, 6
3	0, 1, 3, 2
2	1, 2
1	1

L.C.M. = $3 \times 3 \times 3 \times 2 = 54$

(e) 100, 50, 150

2	100, 50, 150
2	50, 25, 75
5	25, 25, 75
5	5, 5, 15
3	1, 1, 3
	1, 1, 1

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

(f) 33, 66

3	33, 66
2	11, 22
11	11, 11
	1 1

L.C.M. = $3 \times 2 \times 11 = 66$

(g) 216, 540, 252

2	216, 540, 252
2	108, 270, 126
3	54, 135, 63
3	18, 45, 21
3	6, 15, 7
2	2, 5, 7
5	1, 5, 7
7	1, 1, 7
	1, 1, 1

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

(h) 15, 45, 60

5	15, 45, 60
3	3, 9, 12
2	1, 3, 4
2	1, 3, 2
3	1, 3, 1
	1 1 1

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

(i) 32, 72, 144

2	32, 72, 144
2	16, 36, 72
2	8, 18, 36
2	4, 9, 18
2	2, 9, 9
3	1, 9, 9
3	1, 3, 3
	1, 1, 1

L.C.M. = $2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 = 288$

3.

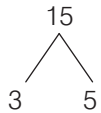
	Numbers	Multiples	Common Multiples	L.C.M.
(a)	2	2, 4, 6, 8, 10	6	6
	3	3, 6, 9, 12, 15		
(b)	5	5, 10, 15, 20, 25	10, 20	20
	10	10, 20, 30, 40, 50		

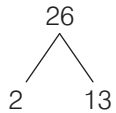
Ex. 3.4

1.

	Numbers	Factors	Common factors	Highest common factors
(a)	14	2×7	2, 7	14
	84	$2\times2\times3\times7$		
(b)	28	$2\times2\times7$	2, 4	4
	40	$2\times2\times2\times5$		
(c)	45	$3\times3\times5$	3, 9	9
	36	$2\times2\times3\times3$		
(d)	49	7×7	1	1
	36	$2\times2\times3\times3$		

2. (a) 15, 26

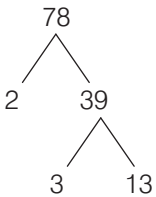


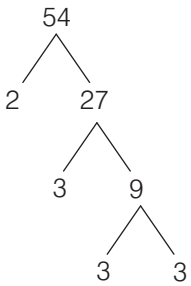


$15 = 3\times5$ $26 = 2\times13$

H.C.F. = 1

(b) 78, 54

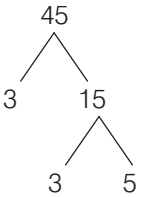


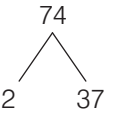


$78 = 2\times3\times13$ $54 = 2\times3\times3\times3$

H.C.F. $= 2\times3 = 6$

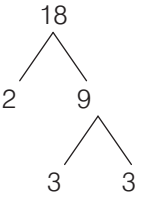
(c) 45, 74

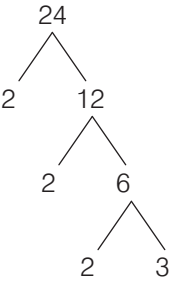


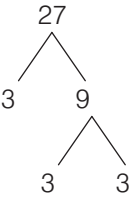


$45 = 3 \times 3 \times 5$ $74 = 2 \times 37$ H.C.F. = 1

(d) 18, 24, 27



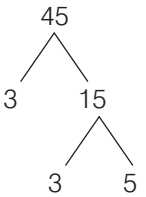


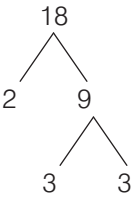


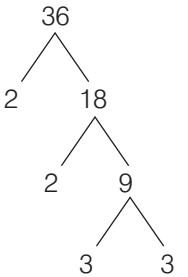
$18 = 2 \times 3 \times 3$ $24 = 2 \times 2 \times 2 \times 3$

$27 = 3 \times 3 \times 3$ H.C.F. = 3

(e) 45, 18, 36



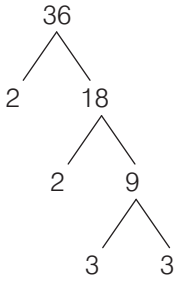


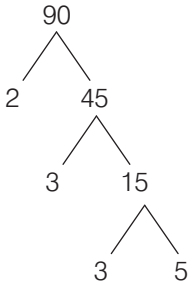


$45 = 3 \times 3 \times 5$ $18 = 2 \times 3 \times 3$

$36 = 2 \times 2 \times 3 \times 3$ H.C.F. $= 3 \times 3 = 9$

(f) 36, 90

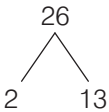


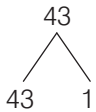


$36 = 2 \times 2 \times 3 \times 3$ $90 = 2 \times 3 \times 3 \times 5$

H.C.F. $= 2 \times 3 \times 3 = 18$

(g) 26, 43

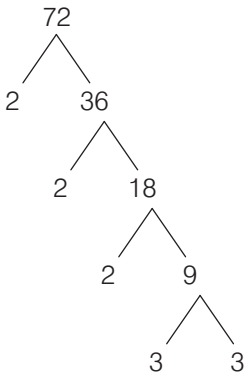


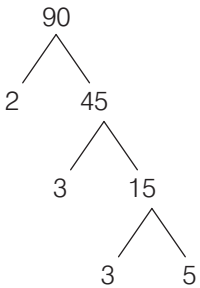


$26 = 2 \times 13$ $43 = 43 \times 1$

H.C.F. $= 1$

(h) 72, 90





$72 = 2 \times 2 \times 2 \times 3 \times 3$ $90 = 2 \times 3 \times 3 \times 5$

H.C.F. $= 2 \times 3 \times 3 = 18$

3. (a) 72, 104, 92

$72\overline{)104}(1$
$\underline{72}$
$32\overline{)72}(2$
$\underline{64}$
$08\overline{)32}(4$
$\underline{32}$
$\underline{00}$

$8\overline{)92}(11$
$\underline{8}$
$\underline{12}$
$\underline{8}$
$4\overline{)8}(2$
$\underline{8}$
$\underline{0}$

H.C.F. = 4

(b) 144, 180, 192

$144\overline{)180}(1$
$\underline{144}$
$036\overline{)144}(4$
$\underline{144}$
$\underline{00}$
$36\overline{)192}(5$
$\underline{180}$
$012\overline{)36}(3$
$\underline{36}$
$\underline{00}$ H.C.F. = 12

(c) 88, 110, 132

$88\overline{)110}(1$
88
$22\overline{)88}(4$
88
00
$22\overline{)132}(6$
132
000

H.C.F. = 22

(d) 15, 72, 84

$15\overline{)72}(4$
60
$12\overline{)15}(1$
12
$3\overline{)12}(4$
12
00 Find H.C.F. of 3 and 84.

$3\overline{)84}(28$
84
00 H.C.F. = 3

(e) 70, 98,154

$70\overline{)98}(1$
70
$28\overline{)70}(2$
56
$14\overline{)28}(2$
28
00 Now find H.C.F. of 14 and 154

$$14\overline{)154}(11$$
$$154$$
$$\overline{000}$$

H.C.F = 14

(f) 39, 43

$$39\overline{)43}(1$$
$$39$$
$$4\overline{)39}(9$$
$$36$$
$$3\overline{)4}(1$$
$$3$$
$$1\overline{)3}(3$$
$$3$$
$$\overline{0}$$

H.C.F. = 1

(g) 175, 300, 425

$$175\overline{)300}(1$$
$$175$$
$$125\overline{)175}(1$$
$$125$$

$$50\overline{)125}(2$$
$$100$$
$$25\overline{)50}(2$$
$$50$$
$$\overline{00}$$

Now find H.C.F. of 25 and 425

$$25\overline{)425}(17$$
$$420$$
$$\overline{00}$$

H.C.F. = 25

(h) 76, 84, 138

76) 84 (1
76
08) 76 (9
72
4) 8 (2
8
0

Now find H.C.F. of 4 and 138

4) 138 (34
136
2) 4 (2
4
6

H.C.F. = 2

(i) 121, 132, 143

121) 132 (1
121
011) 121 (11
111
00

Now find H.C.F. of 11 and 143

11) 143 (13
143
00

H.C.F. = 11

(j) 64, 128, 256

64) 128 (2
128
00

Now find H.C.F. of 64 and 256

64) 256 (4
256
00

H.C.F. = 64

(k) 18, 81, 542

$18\overline{)81}(4$
72
$09\overline{)18}(2$
18
$\overline{00}$ Now find H.C.F. of 9 and 542

$9\overline{)542}(60$
540
$2\overline{)9}(4$
8
$1\overline{)2}(2$
2
$\overline{6}$ H.C.F. = 1

(l) 34, 56

$34\overline{)56}(1$
34
$22\overline{)34}(1$
22
$12\overline{)22}(1$
12
$10\overline{)12}(1$
10
$2\overline{)10}(5$
10
$\overline{00}$ H.C.F. = 2

4. (a) Largest number that divides 18 and 24 is H.C.F. of 18 and 24

$18\overline{)24}(1$
18
$6\overline{)18}(3$
18
$\overline{00}$

∴ The largest number that divides 18 and 24 is 6

(b) The greatest number that divides 96 and 108 is H.C.F. of 96 and 108

$$
\begin{array}{r}
96\overline{)108}(1 \\
96 \\
\hline
12\overline{)96}(8 \\
96 \\
\hline
00
\end{array}
$$

$\therefore$ 12 divides 96 and 108 without a remainder

Sum up

1. (a) (i) (b) (iii) (c) (ii) (d) (iii)

2.

(a) 50 → $2 \times 5 \times 5$ (b) 70 → $2 \times 5 \times 7$ (c) 120 → $2 \times 6 \times 2 \times 5$

3.

(a) 100 → 2, 50

(b) 27 → 3, 9 → 3, 3

(c) 36 → 2, 18 → 2, 9 → 3, 3

$100 = 2 \times 2 \times 5 \times 5$ $27 = 3 \times 3 \times 3$ $36 = 2 \times 2 \times 3 \times 3$

(d) 64 → 2, 32 → 2, 16 → 2, 8 → 2, 4 → 2, 2

(e) 34 → 2, 17

$64 = 2 \times 2 \times 2 \times 2 \times 2 \times 2$ $34 = 2 \times 17$

4. (a) 23, 46

$$\begin{array}{r|l} 23 & 23,\ 46 \\ \hline 2 & 1,\ 2 \\ \hline & 1 \end{array}$$

L.C.M. $= 23 \times 2 = 46$

(b) 36, 42

$$\begin{array}{r|l} 2 & 36,\ 42 \\ \hline 3 & 18,\ 21 \\ \hline 2 & 6,\ 7 \\ \hline 3 & 3,\ 7 \\ \hline 7 & 1,\ 7 \\ \hline & 1 \end{array}$$

L.C.M. = 252

(c) 21, 14, 42

$$\begin{array}{r|l} 7 & 21,\ 14,\ 42 \\ \hline 2 & 3,\ 2,\ 6 \\ \hline 3 & 3,\ 1,\ 3 \\ \hline 1 & 1 \end{array}$$

L.C.M. = 42

(d) 10, 25

$$\begin{array}{r|l} 2 & 10,\ 25 \\ \hline 5 & 5,\ 25 \\ \hline 5 & 1,\ 5 \\ \hline & 1 \end{array}$$

L.C.M. $= 2 \times 5 \times 5 = 50$

(e) 40, 75

$$\begin{array}{r|l} 5 & 40,\ 75 \\ \hline 2 & 8,\ 15 \\ \hline 2 & 4,\ 15 \\ \hline 2 & 2,\ 15 \\ \hline 3 & 1,\ 15 \\ \hline 5 & 1,\ 5 \\ \hline & 1 \end{array}$$

L.C.M. $= 5 \times 2 \times 2 \times 2 \times 3 \times 5 = 600$

(f) 10, 15, 60

$$\begin{array}{r|l} 2 & 10,\ 15,\ 60 \\ \hline 5 & 5,\ 15,\ 30 \\ \hline 3 & 1,\ 3,\ 6 \\ \hline 2 & 1,\ 1,\ 2 \\ \hline 1, & 1,\ 1 \end{array}$$

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

(g) 16, 48

2	16, 48
2	8, 24
2	4, 12
2	2, 6
3	1, 3
	1

L.C.M. = 48

(h) 11, 22, 24

11	11, 22, 24
2	1, 2, 24
2	1, 1, 12
2	1, 1, 6
3	1, 1, 3
1,	1, 1

L.C.M. = 264

Ex. 4.1

1. (a) $\frac{7\times2}{8\times2}=\frac{14}{16}$

(b) $\frac{5\times2}{12\times2}=\frac{10}{24}$

(c) $\frac{1\times2}{4\times2}=\frac{2}{8}$

(d) $\frac{3\times2}{8\times2}=\frac{6}{16}$

(e) $\frac{2\times2}{5\times2}=\frac{4}{10}$

(f) $\frac{3\times2}{4\times2}=\frac{6}{8}$

2. (a) Like

(b) Unlike

(c) Unlike

(d) Like

3. (a) $\frac{3}{13}, \frac{25}{65}$

$3\times65=195$

$13\times25=325$

No, $\frac{3}{13}\neq\frac{25}{65}$

No

(b) $\frac{3}{5}, \frac{27}{45}$

$45\times3=135$

$5\times27=135$

$\therefore \frac{3}{5}=\frac{27}{45}$

Yes

(c) $\frac{10}{42}, \frac{5}{21}$

$21 \times 10 = 210$

$42 \times 5 = 210$

$\therefore \frac{10}{42} = \frac{5}{21}$

Yes

(d) $\frac{3}{4}, \frac{4}{3}$

$4 \times 4 = 16$

$3 \times 3 = 9$

$\therefore \frac{3}{4} \neq \frac{4}{3}$

No

(e) $\frac{4}{7}, \frac{8}{19}$

$19 \times 4 = 76$

$7 \times 8 = 56$

$\frac{4}{7} \neq \frac{8}{19}$

No

(f) $\frac{6}{14}, \frac{3}{7}$

$7 \times 6 = 42$

$14 \times 3 = 42$

$\therefore \frac{6}{14} = \frac{3}{7}$

Yes

(g) $\frac{13}{17}, \frac{8}{13}$

$13 \times 13 = 169$

$17 \times 8 = 136$

$\therefore \frac{13}{17} \neq \frac{8}{13}$

No

(h) $\frac{72}{100}, \frac{18}{25}$

$72 \times 25 = 1800$

$18 \times 100 = 1800$

$\therefore \frac{72}{100} = \frac{18}{25}$

Yes

4. (a) $\frac{42}{49} \div \frac{7}{7} = \frac{6}{7}$

(b) $\frac{15}{30} \div \frac{15}{15} = \frac{1}{2}$

(c) $\frac{10}{40} \div \frac{10}{10} = \frac{1}{4}$

(d) $\frac{5}{20} \div \frac{5}{5} = \frac{1}{4}$

(e) $\frac{16}{24} \div \frac{8}{8} = \frac{2}{3}$

5. (a) $\frac{8}{9}$

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

$\frac{8}{9} \times \frac{3}{3} = \frac{24}{27}$

$\frac{8}{9} \times \frac{3}{3} = \frac{24}{27}$

$\frac{8}{9} = \frac{16}{18} = \frac{24}{27}$

(b) $\frac{1}{9}$

$\frac{1}{9} \times \frac{2}{2} = \frac{2}{18}$

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

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

$\frac{1}{9} = \frac{2}{18}, \frac{3}{27}$

(c) $\frac{6}{7}$

$\frac{6}{7} \times \frac{2}{2} = \frac{12}{14}$

$\frac{6}{7} \times \frac{3}{3} = \frac{18}{21}$

$\frac{6}{7} = \frac{12}{14} = \frac{18}{21}$

(d) $\frac{2}{13}$

$\frac{2}{13} \times \frac{2}{2} = \frac{4}{26}$

$\frac{2}{13} \times \frac{3}{3} = \frac{6}{39}$

$\frac{2}{13} = \frac{4}{26} = \frac{6}{39}$

(e) $\frac{1}{11}$

$\frac{1}{11} \times \frac{2}{2} = \frac{2}{22}$; $\frac{1}{11} \times \frac{3}{3} = \frac{3}{33}$; $\frac{1}{11} = \frac{2}{22} = \frac{3}{22}$

E.x. 4.2

1. (a) $\frac{82}{104}$

$\frac{82}{104} = \frac{82}{104} \div \frac{2}{2} = \frac{41}{52}$

$\frac{41}{52}$ is the lower form of the fraction

(b) $\frac{35}{80}$

$\frac{35}{80} = \frac{35}{80} \div \frac{5}{5} = \frac{7}{16}$

$\frac{7}{16}$ is the lower form of the fraction

(c) $\frac{48}{60}$

$\frac{48}{60} = \frac{48}{60} \div \frac{2}{2} = \frac{24}{80}$

(d) $\frac{9}{45}$

$\frac{9}{45} = \frac{9}{45} \div \frac{3}{3} = \frac{3}{15}$

$\frac{24}{60} = \frac{24}{30} \div \frac{2}{2} = \frac{12}{30}$

$\frac{12}{30} = \frac{12}{30} \div \frac{2}{2} = \frac{6}{15}$

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

$\frac{2}{5}$ is the flower form of the fraction

$\frac{3}{15} = \frac{3}{15} \div \frac{3}{3} = \frac{1}{5}$

$\frac{1}{5}$ is the lower form of the fraction

(e) $\frac{3}{18}$

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

$\frac{1}{6}$ is the lowest form of the fraction

(f) $\frac{16}{20}$

$\frac{16}{20} = \frac{16}{20} \div \frac{2}{2} = \frac{8}{10}$

$\frac{8}{10} \div \frac{2}{2} = \frac{4}{5}$

$\frac{4}{5}$ is the lower form of the fraction

(g) $\frac{14}{21}$

$\frac{14}{21} = \frac{14}{21} \div \frac{7}{7} = \frac{2}{3}$

$\frac{2}{3}$ is the lowest form of the fraction

(h) $\frac{7}{35}$

$\frac{7}{35} = \frac{7}{35} \div \frac{7}{7} = \frac{1}{5}$

$\frac{1}{5}$ is the lowest form of the fraction

(i) $\frac{9}{12}$

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

$\frac{3}{4}$ is the lowest form of the fraction

(j) $\frac{7}{42}$

$\frac{7}{42} = \frac{7}{42} \div \frac{7}{7} = \frac{1}{6}$

$\frac{1}{6}$ is the lowest form of the fraction

(k) $\frac{12}{16}$

$\frac{12}{16} = \frac{12}{16} \div \frac{4}{4} = \frac{3}{4}$

(l) $\frac{20}{25}$

$\frac{20}{25} = \frac{20}{25} \div \frac{5}{5} = \frac{4}{5}$

$\frac{3}{4}$ is the lowest form of the fraction

$\frac{4}{5}$ is the lowest form of the fraction

2. $\frac{3}{11}, \frac{1}{5}, \frac{2}{11}, \frac{7}{9}$

E.x. 4.3

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

(b) $\frac{4}{7} > \frac{2}{7}$

(c) $\frac{1}{7} \quad \frac{1}{12}$

$12 \times 1 = 12$

$7 \times 1 = 7;\ 12 > 7$

$\therefore \frac{1}{7} > \frac{1}{12}$

(d) $\frac{3}{11} < \frac{8}{11}$

(e) $\frac{6}{17} \frac{6}{13}$

$13 \times 6 = 789$

$17 \times 6 = 102$

$78 < 102$

$\frac{6}{17} < \frac{6}{13}$

(f) $\frac{1}{11} \frac{1}{37}$

$1 \times 37 = 37$

$1 \times 11 = 11$

$37 > 11$

$\therefore \frac{1}{11} > \frac{1}{37}$

(g) $\frac{2}{5} \ \frac{1}{11}$

$11 \times 2 = 22$

$5 \times 1 = 5;\ 22 > 5$

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

(h) $\frac{1}{3} \frac{3}{7}$

$1 \times 7 = 7$

$3 \times 3 = 9$

$7 < 9$

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

2. (a) $\frac{2}{5} \ \frac{2}{7}$

$2 \times 7 = 14$

(b) $\frac{1}{7} \quad \frac{1}{9}$

$9 \times 1 = 9$

$2 \times 5 = 10$

$14 > 10$

$\therefore \frac{2}{5} > \frac{2}{7}$

$7 \times 1 = 7$

$9 > 7$

$\therefore \frac{1}{7} > \frac{1}{9}$

(c) $\frac{1}{11}\ \frac{1}{13}$

$13 \times 1 = 13$

$11 \times 1 = 11$

$13 > 11$

$\therefore \frac{1}{11} > \frac{1}{13}$

(d) $\frac{5}{12}\ \frac{5}{11}$

$11 \times 5 = 55$

$12 \times 5 = 60$

$55 < 60$

$\frac{5}{12} < \frac{5}{11}$

(e) $\frac{3}{13}\ \frac{3}{7}$

$7 \times 3 = 21$

$13 \times 3 = 39$

$21 < 39$

$\frac{3}{13} < \frac{3}{7}$

(f) $\frac{6}{15}\ \frac{6}{13}$

$13 \times 6 = 78$

$15 \times 6 = 90$

$78 < 90$

$\therefore \frac{6}{15} < \frac{6}{13}$

(g) $\frac{4}{7}\qquad\frac{4}{9}$

$4 \times 9 = 36$

$7 \times 4 = 28$

$36 > 28$

$\therefore \frac{4}{7} > \frac{4}{9}$

(h) $\frac{8}{19}\ \ \frac{8}{11}$

$11 \times 8 = 88$

$19 \times 8 = 152$

$88 < 152$

$\therefore \frac{8}{19} < \frac{8}{11}$

3. (a) $\frac{1}{2}, \frac{2}{3}, \frac{5}{6}, \frac{3}{8}$

L.C.M = 24

$\frac{1}{2} \times \frac{12}{12} = \frac{12}{24}$

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

L.C.M = 24

$\frac{2}{3} \times \frac{8}{8} = \frac{16}{24}$

$\frac{5}{6} \times \frac{4}{4} = \frac{20}{24}$

$\frac{3}{8} \times \frac{3}{3} = \frac{9}{24}$

$\frac{9}{24} < \frac{12}{24} < \frac{16}{24} < \frac{20}{24}$

$\frac{3}{8} < \frac{1}{2} < \frac{2}{3} < \frac{5}{6}$

(b) $\frac{7}{12}, \frac{7}{10}, \frac{7}{8}, \frac{7}{9}, \frac{7}{15}$; $\frac{7}{15} < \frac{7}{12} < \frac{7}{10} < \frac{7}{9} < \frac{7}{8}$

(c) $\frac{9}{12}, \frac{2}{3}, \frac{6}{15}, \frac{5}{6}$

L.M.C = 60

$\frac{9}{12} \times \frac{5}{5} = \frac{45}{60}$

$\frac{2}{3} \times \frac{20}{20} = \frac{40}{60}$

$\frac{6}{15} \times \frac{4}{4} = \frac{24}{60}$

$\frac{5}{6} \times \frac{10}{10} = \frac{50}{60}$

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

L.C.M = 60

$\frac{24}{60} < \frac{40}{60} < \frac{45}{60} < \frac{50}{60} \Rightarrow \frac{6}{15} < \frac{2}{3} < \frac{9}{12} < \frac{5}{6}$

(d) $\frac{4}{5}, \frac{1}{5}, \frac{7}{10}, \frac{1}{3}$

L.C.M = 30

$\frac{4}{5} \times \frac{6}{6} = \frac{24}{30}$

$\frac{1}{2} \times \frac{15}{15} = \frac{15}{30}$

$\frac{7}{10} \times \frac{3}{3} = \frac{21}{30}$

5	5, 2, 10, 3
2	1, 2, 2, 3
3	1, 1, 1, 3
	1, 1, 1, 1

L.C.M = 30

$\frac{1}{3} \times \frac{10}{10} = \frac{10}{30}$

$\frac{10}{30} < \frac{15}{30} < \frac{21}{30} < \frac{24}{30} \Rightarrow \frac{1}{3} < \frac{1}{2} < \frac{7}{10} < \frac{4}{5}$

(e) $\frac{3}{4}, \frac{8}{12}, \frac{5}{8}, \frac{1}{6}$

L.C.M = 24

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

$\frac{8}{12} \times \frac{2}{2} = \frac{16}{24}$

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

$\frac{1}{6} \times \frac{4}{4} = \frac{4}{24}$

$\frac{4}{24} < \frac{15}{24} < \frac{16}{24} < \frac{18}{24} \Rightarrow \frac{1}{6} < \frac{5}{8} < \frac{8}{12} < \frac{3}{4}$

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

L.C.M = 24

(f) $\frac{2}{6}, \frac{5}{12}, \frac{7}{8}, \frac{3}{12}$

L.C.M = 24

$\frac{2}{6} \times \frac{4}{4} = \frac{8}{24}$

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

$\frac{7}{8} \times \frac{3}{3} = \frac{21}{24}$

$\frac{3}{12} \times \frac{2}{2} = \frac{6}{24}$

$\frac{6}{24} < \frac{8}{24} < \frac{10}{24} < \frac{21}{24} \Rightarrow \frac{3}{12} < \frac{2}{6} < \frac{5}{12} < \frac{7}{8}$

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

L.C.M = 24

4. (a) $\frac{9}{17}, \frac{4}{17}, \frac{3}{17}, \frac{5}{17}, \frac{1}{17}$

$\frac{9}{17} > \frac{5}{17} > \frac{4}{17} > \frac{3}{17} > \frac{1}{17}$

(b) $\frac{1}{2}, \frac{1}{6}, \frac{3}{4}, \frac{5}{6}$

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

L.C.M = 12

L.C.M = 12

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

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

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

$\frac{5}{6} \times \frac{2}{2} = \frac{10}{12}$

$\frac{10}{12} > \frac{9}{12} > \frac{6}{12} > \frac{2}{12} \Rightarrow \frac{5}{6} > \frac{3}{4} > \frac{1}{2} > \frac{1}{6}$

(c) $\frac{3}{6}, \frac{10}{12}, \frac{4}{9}, \frac{3}{8}$

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

L.C.M = 72

$\frac{3}{6} \times \frac{12}{12} = \frac{36}{72}$

$\frac{10}{12} \times \frac{6}{6} = \frac{60}{72}$

$\frac{4}{9} \times \frac{8}{8} = \frac{32}{72}$

$\frac{3}{8} \times \frac{9}{9} = \frac{27}{72}$

$\frac{60}{72} > \frac{36}{72} > \frac{32}{72} > \frac{27}{72} \Rightarrow \frac{10}{12} > \frac{3}{6} > \frac{4}{9} > \frac{3}{8}$

(d) $\frac{9}{12}, \frac{9}{20}, \frac{9}{15}, \frac{9}{14}, \frac{9}{11} \Rightarrow \frac{9}{11} > \frac{9}{12} > \frac{9}{14} > \frac{9}{15} > \frac{9}{20}$

(e) $\frac{3}{5}, \frac{4}{15}, \frac{6}{20}, \frac{7}{10}$

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

L.C.M. = 60

$\frac{3}{5} \times \frac{12}{12} = \frac{36}{60}$

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

$$\frac{6}{20}\times\frac{3}{3}=\frac{18}{60}$$

$$\frac{7}{10}\times\frac{6}{6}=\frac{42}{60}$$

$$\frac{42}{60}>\frac{36}{60}>\frac{18}{60}>\frac{16}{60}\Rightarrow\frac{7}{10}>\frac{3}{5}>\frac{6}{20}>\frac{4}{15}$$

(f) $\frac{3}{4},\frac{2}{3},\frac{5}{8},\frac{7}{9},\frac{11}{12}$

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

L.C.M = 72

$$\frac{3}{4}\times\frac{18}{18}=\frac{54}{72}$$

$$\frac{2}{3}\times\frac{24}{24}=\frac{48}{72}$$

$$\frac{5}{8}\times\frac{9}{9}=\frac{45}{72}$$

$$\frac{7}{9}\times\frac{8}{8}=\frac{56}{72}$$

$$\frac{11}{12}\times\frac{6}{6}=\frac{66}{72}$$

$$\frac{66}{72}>\frac{56}{72}>\frac{54}{72}>\frac{48}{72}>\frac{45}{72}\Rightarrow\frac{11}{12}>\frac{7}{9}>\frac{3}{4}>\frac{2}{3}>\frac{5}{8}$$

E.x. 4.4

1. (a) $\frac{1}{2}+\frac{1}{4}$

L.C.M. = 4

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

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

(b) $\frac{2}{5}+\frac{1}{4}$

L.C.M. = 20

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

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

$$\frac{8}{20}+\frac{5}{20}=\frac{13}{20}$$

(c) $\frac{1}{6}+\frac{3}{4}$

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

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

$\frac{2}{12}+\frac{9}{12}=\frac{11}{12}$

(d) $\frac{2}{5}+\frac{4}{10}$

$\frac{2}{5}\times\frac{2}{2}=\frac{4}{10}$

$\frac{4}{10}+\frac{4}{10}=\frac{8}{10}=\frac{4}{5}$

(e) $\frac{1}{8}+\frac{7}{11}$

$\frac{1}{8}\times\frac{11}{11}=\frac{11}{88}$

$\frac{7}{11}\times\frac{8}{8}=56$

$\frac{11}{88}+\frac{56}{88}=\frac{67}{88}$

(f) $2\frac{4}{6}+2\frac{2}{3}$

$=\frac{16}{6}+\frac{8}{3}$

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

$\frac{16}{6}+\frac{16}{6}=\frac{32}{6}$

$=5\frac{2}{6}$

(g) $\frac{3}{11}+\frac{1}{22}$

$\frac{3}{11}\times\frac{2}{2}=\frac{6}{2}$

$\frac{6}{22}+\frac{1}{22}=\frac{7}{22}$

(h) $3\frac{5}{6}+1\frac{3}{4}$

$=\frac{23}{6}+\frac{7}{4}$ L.C.M = 12

$\frac{23}{6}\times\frac{2}{2}=\frac{46}{12}$

$\frac{7}{4}\times\frac{3}{3}=\frac{21}{12}$

$\frac{46}{12}+\frac{21}{12}=\frac{67}{12}=5\frac{7}{12}$

(i) $\frac{3}{8}+\frac{9}{12}$

L.C.M = 16

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

$\frac{6}{16}+\frac{9}{16}=\frac{15}{16}$

(j) $\frac{1}{12}+\frac{3}{6}$

L.C.M = 12

$\frac{3}{6}\times\frac{2}{2}=\frac{6}{12}$

$\frac{1}{12}+\frac{6}{12}=\frac{7}{12}$

(k) $\frac{1}{15}+\frac{4}{5}$

L.C.M = 15

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

$\frac{1}{15}+\frac{12}{15}=\frac{13}{15}$

(l) $\frac{5}{6}+\frac{1}{3}$

L.C.M = 6

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

$\frac{5}{6}+\frac{2}{6}=\frac{7}{6}$

(m) $3\frac{1}{2}+2\frac{1}{4}$

$\frac{7}{2}+\frac{9}{4}$

L.C.M = 4

$\frac{7}{2}\times\frac{2}{2}=\frac{14}{4}$

$\frac{14}{4}+\frac{9}{4}=\frac{23}{4}=5\frac{3}{4}$

(n) $2\frac{1}{4}+3\frac{4}{5}$

$\frac{9}{4}+\frac{19}{5}$

L.C.M = 20

$\frac{9}{4}\times\frac{5}{5}=\frac{45}{20}, \frac{19}{5}\times\frac{4}{4}=\frac{76}{20}$

$\frac{45}{20}+\frac{76}{20}=\frac{121}{20}=6\frac{1}{20}$

(o) $1\frac{3}{7}+2\frac{1}{5}$

$\frac{10}{7}+\frac{11}{5}$

L.C.M = 35

$\frac{10\times5}{7\times5}=\frac{50}{35}, \frac{11\times7}{5\times7}=\frac{77}{35}$

$\frac{9}{12}+\frac{8}{12}=\frac{17}{12}=1\frac{5}{12}$

(p) $\frac{3}{4}+\frac{2}{3}$

L.C.M = 12

$\frac{3}{4}\times\frac{3}{3}=\frac{9}{12}, \frac{2}{3}\times\frac{4}{4}=\frac{8}{12}$

$\frac{50}{35}+\frac{77}{35}=\frac{127}{35}=3\frac{22}{35}$

2. First jump = $\frac{3}{5}m$

Second jump = $\frac{3}{4}m$

Third jump = $\frac{7}{10}m$

Total length of 3 jumps = $\frac{3}{5}+\frac{3}{4}+\frac{7}{10}$

5	5, 4, 10
2	1, 4, 2
2	1, 2, 1
	1, 1, 1

$$\frac{3}{5}+\frac{3}{4}+\frac{7}{10}$$

L.C.M = 20

$$\frac{3}{5}\times\frac{4}{4}=\frac{12}{20},\frac{3}{4}\times\frac{5}{5}=\frac{15}{20},\frac{7}{10}\times\frac{2}{2}=\frac{14}{20}$$

$$\frac{12}{20}+\frac{15}{20}+\frac{14}{20}=\frac{41}{20}=2\frac{1}{20}$$

Ans. $= = 2\frac{1}{20}m$

3. Distance walked = $\frac{1}{2}$ km

Distance Jogged = $\frac{7}{8}$ km

Total distance covered = $\frac{1}{2}+\frac{7}{8}$

$$\frac{1}{2}+\frac{7}{8}$$

L.C.M = 8

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

$$\frac{4}{8}+\frac{7}{8}=\frac{11}{8}=1\frac{3}{8}$$

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

4. Fraction of pocket money spent on books = $\frac{1}{2}$

Fraction of pocket money spent on a new pen = $\frac{1}{4}$

$$\frac{1}{2}+\frac{1}{4}$$

L.C.M = 4

$$\frac{1}{2}\times\frac{2}{2}+\frac{1}{4}$$

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

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

5. White point used $= 6\frac{4}{5}=\frac{34}{5}$

Blue point used $= 2\frac{7}{10}=\frac{27}{10}$

$$\frac{34}{5}+\frac{27}{10}$$

$$\frac{34\times 2}{5\times 2},\frac{27}{10}$$

$$\frac{68}{10}+\frac{27}{10}=\frac{95}{10}=9\frac{5}{10}$$

Ans. $9\frac{5}{10}$

Mental Maths

1. $\frac{20}{3}$ **2.** $\frac{5}{2}$ **3.** $\frac{25}{3}$ **4.** $\frac{27}{10}$

5. $\frac{11}{4}$ **6.** $\frac{61}{9}$

E.x 4.5

1. (a) $\frac{8}{9}-\frac{2}{9}=\frac{6}{9}=\frac{2}{3}$

(b) $\frac{11}{12}-\frac{1}{4}$ L.C.M = 12

$$\frac{11}{12}-\frac{1}{4}\times\frac{3}{3}$$

$$\frac{11}{12}-\frac{3}{12}=\frac{8}{12}$$

(c) $\frac{7}{6}-\frac{1}{3}$ L.C.M = 6

(d) $\frac{5}{6}-\frac{5}{12}$ L.C.M = 12

$= \frac{7}{6} - \left(\frac{1}{3} \times \frac{2}{2}\right) = \frac{7}{6} - \frac{2}{6} = \frac{5}{6}$

$\left(\frac{5}{6} \times \frac{2}{2}\right) = -\frac{5}{12}$

$\frac{10}{12} - \frac{5}{12} = \frac{5}{12}$

(e) $\frac{9}{10} - \frac{3}{10}$

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

(f) $8 - \frac{3}{4}$

L.C.M = 4

$\left(\frac{8}{1} \times \frac{4}{4}\right) - \frac{3}{4}$

$\frac{32}{4} - \frac{3}{4} = \frac{29}{4}$

(g) $\frac{5}{6} - \frac{3}{5}$

L.C.M = 30

$= \left(\frac{5}{6} \times \frac{5}{5}\right) = \left(\frac{3}{5} \times \frac{6}{6}\right)$

$= \frac{25}{30} - \frac{18}{30} = \frac{7}{30}$

(h) $7 - \frac{1}{4}$

L.C.M = 4

$\frac{7}{1} \times \frac{4}{4} - \frac{1}{4}$

$\frac{28}{4} - \frac{1}{4} = \frac{27}{4}$

(i) $2\frac{2}{3} - 1\frac{1}{4}$

$= \frac{8}{3} - \frac{5}{4} = 3$

$= \left(\frac{8}{3} \times \frac{4}{4}\right) - \left(\frac{5}{4} \times \frac{3}{3}\right)$

$= \frac{32}{12} - \frac{15}{12} = \frac{17}{12}$

(j) $\frac{1}{2} - \frac{1}{3}$

L.C.M = 6

$\frac{1}{2} \times \frac{3}{3} - \frac{1}{3} \times \frac{2}{2}$

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

(k) $7 - 1\frac{1}{2}$

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

L.C.M = 2

(l) $\frac{5}{8} - \frac{1}{3}$

L.C.M = 24

$\frac{5}{8} \times \frac{3}{3}, \frac{1}{3} \times \frac{8}{8}$

$\frac{7}{1}\times\frac{2}{2}-\frac{3}{2}$

$\frac{14}{2}-\frac{3}{2}=\frac{11}{2}$

$\frac{15}{24},\frac{8}{24}$

$\frac{15}{24}+\frac{8}{24}=\frac{23}{24}$

(m) $\frac{9}{10}-\frac{1}{2}$

L.C.M = 10

$\frac{9}{10}-\left(\frac{1}{2}\times\frac{5}{5}\right)$

$\frac{9}{10}-\frac{5}{10}=\frac{4}{10}=\frac{2}{5}$

(n) $3-\frac{1}{2}$

L.C.M = 2

$\frac{3}{1}\times\frac{2}{2}-\frac{1}{2}$

$\frac{6}{2}-\frac{1}{2}=\frac{5}{2}$

(o) $7\frac{1}{3}-2\frac{1}{4}$

$=\frac{22}{3}-\frac{9}{4}$

L.C.M = 12

$=\left(\frac{22}{3}\times\frac{4}{4}\right)-\left(\frac{9}{4}\times\frac{3}{3}\right)$

$=\frac{88}{12}-\frac{27}{12}=\frac{61}{12}=5\frac{1}{12}$

(p) $\frac{5}{6}-\frac{1}{2}$

L.C.M = 6

$\frac{5}{6}-\left(\frac{1}{2}\times\frac{3}{3}\right)$

$\frac{5}{6}-\frac{3}{6}=\frac{2}{6}=\frac{1}{3}$

E.x. 4.6

1. $8\times\frac{3}{4}=\frac{24}{4}=6$

2. $\frac{6}{7}\times 1=\frac{6}{7}$

3. $\frac{5}{7}\times 0;=0$

4. $\frac{1}{2}\times\frac{3}{4}=\frac{3}{8}$

5. $8\times\frac{4}{5}=\frac{32}{5}=6\frac{2}{5}$

6. $12\times\frac{9}{16}=\frac{108}{16}=\frac{27}{4}=6\frac{3}{4}$

7. $9\times\frac{8}{21}=\frac{72}{21}=\frac{24}{7}=3\frac{3}{7}$

8. $5\times\frac{3}{8}=\frac{15}{8}=1\frac{7}{8}$

9. $\frac{4}{5}\times\frac{7}{8}=\frac{28}{40}=\frac{7}{10}$

10. $6\times\frac{3}{17}=\frac{18}{17}=1\frac{1}{17}$

11. $29 \times \frac{1}{29} = \frac{29}{29} = 1$

12. $5 \times \frac{7}{13} = \frac{35}{13}$

13. $7 \times \frac{0}{3} = \frac{0}{3} = 0$

14. $3 \times \frac{1}{9} = \frac{3}{9} = \frac{1}{3}$

15. $1 \times \frac{8}{6} = \frac{8}{6} = \frac{4}{3}$

16. $\frac{8}{12} \times 1 = \frac{8}{12} = \frac{2}{3}$

Beat the Clock

Do yourself

Ex. 4.7

1. (a) $\frac{1}{4} \div 9$

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

(b) $\frac{4}{5} \div 10$

$\frac{4}{5} \times \frac{1}{10} = \frac{4}{50} = \frac{2}{25}$

(c) $\frac{3}{5} \div 6$

$\frac{3}{5} \times \frac{1}{6} = \frac{3}{30} = \frac{1}{10}$

(d) $1\frac{1}{2} \div 2$

$\frac{3}{2} \div 2$

$\frac{3}{2} \times \frac{1}{2} = \frac{3}{4}$

(e) $\frac{3}{4} \div \frac{4}{5}$

$\frac{3}{4} \times \frac{5}{4} = \frac{15}{6}$

(f) $\frac{5}{9} \div \frac{2}{3}$

$\frac{5}{9} \times \frac{3}{2} = \frac{15}{18}$

(g) $\frac{2}{5} \div \frac{1}{5}$

$\frac{2}{5} \times \frac{5}{1} = \frac{10}{5} = 2$

(h) $\frac{4}{9} \div \frac{8}{9}$

$\frac{4}{9} \times \frac{9}{8} = \frac{36}{72} = \frac{1}{2}$

(i) $11\frac{1}{2} \div 5$

$\frac{23}{2} \div 5$

$\frac{23}{2} \times \frac{1}{5} = \frac{23}{10} = 2\frac{3}{10}$

(j) $10\frac{1}{6} \div 3$

$\frac{61}{6} \div 3$

$\frac{61}{6} \times \frac{1}{3} = \frac{61}{18}$

$= 3\frac{7}{18}$

(k) $\frac{3}{7} \div 9$

$\frac{3}{7} \times \frac{1}{9} = \frac{1}{21}$

(l) $9\frac{1}{9} \div 41$

$\frac{82}{9} \div 41$

$\frac{82}{9} \times \frac{1}{41} = \frac{2}{9}$

(m) $\frac{3}{16} \div \frac{4}{5}$

$\frac{3}{16} \times \frac{5}{4} = \frac{15}{64}$

(o) $0 \div \frac{1}{7}$

$0 \times \frac{7}{1} = 0$

$\frac{3}{4} \div \frac{3}{4}$

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

(p) $\frac{1}{3} \div \frac{3}{8}$

$\frac{1}{3} \times \frac{8}{3} = \frac{8}{9}$

2. Total Students = 60

Number of boys = $\frac{4}{5}$ of 60

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

$\therefore$ There are 48 boys in the class

3. Distance travelled = $4\frac{1}{2}$km

Fraction of Journey completed = $\frac{3}{7}$

$\therefore$ Total length of Journey completed = $4\frac{1}{2} \div \frac{3}{7}$

$= \frac{9}{2} \div \frac{3}{7}$

$= \frac{9}{2} \times \frac{7}{3} = \frac{21}{2} = 10\frac{1}{2}$ km

$\therefore$ Total length of the Journey = $10\frac{1}{2}$ km

4. Total length of ribbon = $4\frac{2}{9} = \frac{38}{9} m$

Length of 1 pieces = $\frac{4}{9} m$

$\therefore$ Number of pieces cut = $\frac{38}{9} \div \frac{4}{9}$

$= \frac{19}{2} = 9.5$

9.5 pieces can be cut

5. Length of ribbon = 24m

Length of 1 pieces = $\frac{8}{3}$

$\therefore$ Number of pieces cut = $24 \div \frac{8}{3}$

$= 24 \times \frac{3}{8} = 9$

$\therefore$ 9 pieces can be cut

6. Cost of 5 books = ₹ $7\frac{3}{8} = \frac{59}{8}$

$\therefore$ cost of 1 book = $\frac{59}{8} \div 5$

$= \frac{59}{8} \times \frac{1}{5}$

$= \frac{59}{40} = 1\frac{19}{40} =$ ₹ $1\frac{19}{40}$

$\therefore$ cost of 1 book ₹ $1\frac{19}{40}$

7. Total sweets = $\frac{5}{6}$ kg

Sweets each friend got = $\frac{5}{6} \div 5$

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

$\therefore$ Each friend got 1 kg

8. Length of 1 pieces $= 3\frac{4}{5}\text{ m} = \frac{19}{5}\text{ m}$

Total length of roll $= 38\text{ m}$

$\therefore$ Number of pieces $= 38 \div \frac{19}{5}$

$= 38 \times \frac{5}{19} = 10$

$\therefore$ Answer 10 pieces

Beat the Clock

1. ✗ 2. ✓

Sum up

1. (a) (ii) (b) (ii) (c) (i)

2. (a) $2\frac{3}{5} \times \frac{7}{13}$

$\frac{13}{5} \times \frac{7}{13} = \frac{7}{5}$

(b) $\frac{5}{6} \times \frac{9}{10}$

$= \frac{5}{6} \times \frac{9}{10} = \frac{3}{4}$

(c) $\frac{3}{7} \div \frac{1}{4}$

$= \frac{3}{7} \times \frac{4}{1} = \frac{12}{7} = 1\frac{5}{7}$

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

L.C.M. $= 36$

$= \left(\frac{4}{9} \times \frac{4}{4}\right) - \left(\frac{5}{12} \times \frac{3}{3}\right)$

$= \frac{16}{36} - \frac{15}{36} = \frac{1}{36}$

(e) $5 - 1\frac{6}{7}$

$5 - \frac{13}{7}$

L.C.M $= 7$

$\left(\frac{5}{1} \times \frac{7}{7}\right) - \left(\frac{13}{7} \times \frac{1}{1}\right)$

(f) $\frac{1}{2} + \frac{2}{3} + \frac{3}{4}$

L.C.M $= 12$

$\left(\frac{1}{2} \times \frac{6}{6}\right) + \left(\frac{2}{3} \times \frac{4}{4}\right) + \left(\frac{3}{4} \times \frac{3}{3}\right)$

$= \frac{6}{12} + \frac{8}{12} + \frac{9}{12}$

$\frac{35}{7} - \frac{13}{7} = \frac{22}{7} = 3\frac{1}{7}$

(g) $5\frac{1}{8} - 3\frac{1}{12}$

$\frac{41}{8} - \frac{37}{12}$

L.C.M. = 24

$= \left(\frac{41}{8} \times \frac{3}{3}\right) - \left(\frac{37}{12} \times \frac{2}{2}\right)$

$= \frac{123}{24} - \frac{74}{24}$

$\frac{49}{24} = 2\frac{1}{24}$

(h) $\frac{17}{16} - \frac{11}{24}$

L.C.M. = 48

$\left(\frac{17}{16} \times \frac{3}{3}\right) - \left(\frac{11}{24} \times \frac{2}{2}\right)$

$= \frac{51}{48} - \frac{22}{48}$

$= \frac{29}{48}$

(i) $\frac{1}{2} + \frac{1}{3} + \frac{1}{4}$

L.C.M = 12

$\left(\frac{1}{2} \times \frac{6}{6}\right) + \left(\frac{1}{3} \times \frac{4}{4}\right) + \left(\frac{1}{4} \times \frac{3}{3}\right)$

$\frac{6}{12} + \frac{4}{12} + \frac{3}{12} = \frac{13}{12} = 1\frac{1}{2}$

(j) $\frac{7}{8} \times \frac{3}{4}$

$= \frac{21}{32}$

(k) $\frac{5}{8} + \frac{7}{12}$

L.C.M = 24

$\left(\frac{5}{8} \times \frac{3}{3}\right) + \left(\frac{7}{12} \times \frac{2}{2}\right)$

$\frac{15}{24} + \frac{14}{24} = \frac{29}{24} = 1\frac{5}{24}$

(l) $1\frac{1}{3} \times 6\frac{4}{5}$

$= \frac{4}{3} \times \frac{34}{5}$

$= \frac{136}{15} = 9\frac{1}{15}$

(m) $\frac{1}{6} + \frac{9}{10}$

$= \left(\frac{1}{6} \times \frac{5}{5}\right) + \left(\frac{9}{10} \times \frac{3}{3}\right)$

(n) $18 \div \frac{3}{4}$

$18 \times \frac{4}{3}$

L.C.M = 30 = 24

$\frac{5}{30}+\frac{27}{30}=\frac{32}{30}=\frac{16}{15}=1\frac{1}{15}$

(o) $\frac{6}{15}\div 2$

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

(p) $\frac{5}{9}\div 3$

$\frac{5}{9}\times\frac{1}{3}=\frac{5}{27}$

3. (a) $\frac{3}{8}$

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

$\frac{3}{8}\times\frac{3}{3}=\frac{9}{24}$

$\frac{3}{8}=\frac{6}{16}=\frac{9}{24}$

(b) $\frac{1}{5}$

$\frac{1}{5}\times\frac{2}{2}=\frac{2}{10}$

$\frac{1}{5}\times\frac{3}{3}=\frac{3}{15}$

$\frac{1}{5}=\frac{2}{10}=\frac{3}{15}$

(c) $\frac{2}{7}$

$\frac{2}{7}\times\frac{2}{2}=\frac{4}{14}$

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

$\frac{2}{7}=\frac{2}{14}=\frac{6}{21}$

(d) $\frac{3}{7}$

$\frac{3}{7}\times\frac{2}{2}=\frac{6}{14}$

$\frac{3}{7}\times\frac{3}{3}=\frac{9}{21}$

$\frac{3}{7}=\frac{6}{14}=\frac{9}{21}$

4. (a) $\frac{4}{11}<\frac{6}{11}$

(b) $\frac{13}{5}>\frac{6}{5}$

(c) $\frac{7}{17}<\frac{9}{17}$

(d) $\frac{3}{5}\quad\frac{15}{25}$

$3\times 25=75$

$5\times 15=75$

$\frac{3}{5}=\frac{15}{25}$

5. Length of roll = 49, m

Length of 1 piece $1\frac{3}{4}=\frac{7}{4}$ m

$\therefore$ Number of Pieces $= 49 \div \frac{7}{4}$

$$= \frac{49}{1} \times \frac{4}{7} = 28 \text{ pieces}$$

$\therefore$ 28 pieces can be cut

6. Total students = 800

$$\left.\begin{matrix}\text{Number of students} \\ \text{Passed in the examination}\end{matrix}\right\} = \frac{3}{5} \times 800$$

$$= \frac{3}{5} \times 800$$

$$= 480$$

Number of students who = 800 – 480

Did not pass in the examination = 320

$\therefore$ 320 students did not pass in the examination

7. Total gas in the cylinder = 35 l

Gas used $= \frac{118}{5}$ l

Gas left in the cylinder $= 35 - \frac{118}{5}$

$$= \left(\frac{35}{1} \times \frac{5}{5}\right) = \frac{118}{5} = \frac{175}{5} - \frac{118}{5}$$

$$= \frac{57}{5} = 11\frac{2}{5} \text{ l}$$

Ex. 5.1

1. $8 + 1 - 2 + 3 \times 3$

$= 8 - 1 - 2 + 9$

$= 9 - 2 + 9$

$= 18 - 2$

$= 16$

2. $4 + 3 \times 9 + 1 - 3$

$= 4 + 27 + 1 - 3$

$= 31 + 1 - 3$

$= 32 - 3$

$= 29$

3. $6 + 3 - 3$
$= 9 - 3$
$= 6$

4. $6 + 3 \times 2$
$= 6 + 6$
$= 12$

5. $8 + 7 \times 1 + 7$
$= 8 + 7 + 7$
$= 8 + 14$
$= 22$

6. $9 \times 2 + 9$
$= 18 + 9$
$= 27$

7. $9 \times 4 + 5$
$= 36 + 5$
$= 41$

8. $2 \times 3 + 4 \times 2 + 2$
$= 6 + 8 + 2$
$= 61$

9. $1 \times 7 + 8 + 5 \times 5$
$= 7 + 8 + 25 = 7 + 25 + 8 = 32 + 8 = 32 + 8 = 40$

E.x. 5.2

1. $\{(15 + 67) \times 10\} + 8$
$= \{82 \times 10\} + 8$
$= 820 + 8$
$= 828$

2. $1 \times 7 \times 7 \times 11 + (17 + 21)$
$= 1 \times 7 \times 11 + (38)$
$= 77 + 38$
$= 115$

3. $6 \times (2 + 43 \times 6) \div 2$
$= 6 \times (2 + 258) \div 2$
$= 6 \times 260 \div 2$
$= 6 \times 130$
$= 780$

4. $25 + 14 \div (5 - 3)$
$= 25 + 14 \div 2$
$= 25 + 7$
$= 32$

5. $3 - (5 - 6 \div 3)$
$= 3 - (5 - 2)$
$= 3 - 3$
$= 0$

6. $78 - [5 - 3 \times (25 - 2 \times 10)]$
$= 78 - [5 - 3 \times (25 - 20)]$
$= 78 - [5 - 3 \times 5]$
$= 78 - (5 - 15)$
$= 78 - (- 10)$
$= 78 + 10$
$= 88$

E.x. 5.3

1. $\left[1\frac{7}{8} \div 1\frac{1}{2}\right]$ of $\left[8\frac{1}{3} \div 1\frac{2}{3}\right]$

$$= \left[\frac{15}{8} \div \frac{3}{2}\right] \text{of} \left[\frac{25}{3} \div \frac{5}{3}\right] = \left[\frac{15}{8} \div \frac{2}{3}\right] \text{of} \left(\frac{25}{3} \times \frac{3}{5}\right)$$

$$= \frac{5}{4} \text{ of } 5$$

$$= \frac{5}{4} \times 5 = \frac{25}{4} = 6\frac{1}{4}$$

2. $\frac{3}{8} - 2\frac{5}{7} \div 4\frac{3}{4}$ of $2\frac{6}{7} - 2\frac{3}{10} + 2\frac{2}{5}$

$$= \frac{3}{8} - \frac{19}{7} \div \frac{19}{4} \text{ of } \frac{20}{7} - \frac{23}{10} + \frac{12}{5}$$

$$= \frac{3}{8} - \frac{19}{7} \div \frac{19}{4} \times \frac{20}{7} - \frac{23}{10} + \frac{12}{5}$$

$$= \frac{3}{8} - \frac{1}{5} - \frac{23}{10} + \frac{12}{5}$$

$$= \frac{3}{8} - \frac{23}{10} - \frac{1}{5} + \frac{12}{5}$$

$$= \frac{3}{8} - \frac{23}{10} + \frac{11}{5}$$

$$= \frac{3}{8} \times \frac{5}{5} - \frac{23}{10} \times \frac{4}{4} + \frac{11}{5} \times \frac{8}{8}$$

$$= \frac{15}{40} - \frac{92}{40} + \frac{88}{40}$$

$$= \frac{15 - 92 + 88}{40} = \frac{15 - 4}{40} = \frac{11}{40}$$

3. $\left(\frac{1}{2} - \frac{1}{3}\right)$ of $\left(\frac{3}{4} - \frac{2}{5}\right) \div \left(\frac{1}{2} + \frac{1}{7} - \frac{2}{5}\right)$

$\left(\frac{3}{6} - \frac{2}{6}\right)$ of $\left(\frac{15}{20} - \frac{8}{20}\right) \div \left(\frac{35}{70} + \frac{10}{70} - \frac{28}{70}\right)$

$\left(\frac{1}{6}\right)$ of $\left(\frac{7}{20}\right) \div \left(\frac{17}{70}\right)$

$$= \frac{1}{6} \times \frac{7}{20} \div \frac{17}{40}$$

$$= \frac{7}{120} \times \frac{40}{17} = \frac{7}{51}$$

4. $\frac{4}{5} - \left[\frac{3}{8} - \left\{\frac{5}{6} + \left(\frac{19}{18} - \frac{7}{4}\right)\right\}\right]$

$\frac{4}{5} - \left[\frac{3}{8} - \left\{\frac{5}{6} + \left(\frac{19-14}{8}\right)\right\}\right]$

$\frac{4}{5} - \left[\frac{3}{8} - \left\{\frac{5}{6} \times \frac{4}{4} + \frac{5}{8} \times \frac{3}{3}\right\}\right]$

$\frac{4}{5} - \left[\frac{3}{8} - \left\{\frac{20}{24} + \frac{15}{24}\right\}\right]$

$\frac{4}{5} - \left[\frac{9}{24} - \frac{35}{24}\right]$

$\frac{4}{5} - \frac{26}{24}$

$\frac{96-130}{5 \times 24} = \frac{34}{5 \times 24} = -\frac{17}{60}$

5. $2\frac{2}{5}\left[1\frac{2}{9} \div \left\{1\frac{7}{15} + \left(4\frac{3}{5} - 1\frac{4}{5}\right)\right\}\right]$

$\frac{12}{5}\left[\frac{11}{9} \div \left\{\frac{22}{15} + \left(\frac{23}{5} - \frac{9}{5}\right)\right\}\right]$

$\frac{12}{5}\left[\frac{11}{9} \div \left\{\frac{22}{15} + \frac{14}{5} \times \frac{3}{3}\right\}\right]$

$\frac{12}{5}\left[\frac{11}{9} \div \left\{\frac{22}{15} + \frac{42}{15}\right\}\right]$

$\frac{12}{5}\left[\frac{11}{9} \div \frac{64}{15}\right]$

$\frac{12}{5} \times \frac{11}{9} \times \frac{15}{64} = \frac{11}{16}$

E.x. 6.1

1. (a) (iii) (b) (v) (c) (i) (d) (iv)
(e) (ii)

2. (a) 165.24 (b) 9266.08 (c) 57.92 (d) 0.426
(e) 478.942 (f) 3000.003

3. (a) $\frac{8}{10}$ (b) $\frac{2}{10}$ (c) $\frac{5}{10}$ (d) $\frac{1}{10}$ (e) $\frac{7}{10}$

4. (a) 0.9 (b) 0.3 (c) 0.6 (d) 0.8 (e) 0.5

Beat the Clock

Th	H	T	O	Tenths	Hundredths	Thousandths
1	7	2	9	3	0	4

E.x. 6.2

1. (a) 1.56 (b) 2.42

2. (a) 1.01 (b) 0.40 (c) 1.120 (d) 2.24

3. (a) 2.27 (b) 0.072 (c) 0.154 (d) 40.031
(e) 17.001 (f) 0.83 (g) 0.18 (h) 3.27

4. (a) 3.5, 3.6 (b) 4.71, 4.72 (c) 3.623, 3.624 (d) 9.008, 9.009
(e) 0.005, 0.006

5. (a) $\frac{3}{100}$ (b) $\frac{36}{100}$ (c) $\frac{25}{100}$ (d) $\frac{1275}{100}$
(e) $\frac{6}{1000}$ (f) $\frac{4}{10}$ (g) $\frac{4303}{100}$ (h) $\frac{50}{1000}$

6.

Th	H	T	O	Tenths	Hundredths	Thousandths
1	6	3	8	2	0	8

Mental Maths

(a) 4.723, 4.724 (b) 4.723, 4.724

(b) 1.005, 1.006 (c) 13.5, 13.6

E.x. 6.3

1. (a) $3.293 = 3 + \frac{2}{10} + \frac{9}{100} + \frac{3}{1000}$

(b) $37.885 = 30 + 7 + \frac{8}{10} + \frac{8}{100} + \frac{5}{1000}$

(c) $94.407 = 90 + 4 + \frac{4}{10} + \frac{7}{1000}$

(d) $18.25 = 10 + 8 + \frac{2}{10} + \frac{5}{100}$

2. (a) 245.306 (b) 7.58 (c) 2.22 (d) 6.134

3. (a) $3 + \frac{5}{10} + \frac{7}{100}$

(b) $10 + 8 + \frac{2}{100} + \frac{7}{1000}$

(c) $100 + 20 + 4 + \frac{6}{10} + \frac{9}{1000}$

(d) $60 + 4 + \frac{2}{10} + \frac{3}{100} + \frac{9}{1000}$

(e) $300 + 20 + 5 + \frac{3}{10} + \frac{8}{100}$

(f) $8 + \frac{5}{1000}$

E.x. 6.4

1. (a) 40.86,43.621, 132.6, 470.91, 909.869,999

(b) 1.640,3.864,4.3429,6.806, 9.409,9.643

(c) 30.009,70.9, 80.06, 132.9, 190.190,340.6

(d) 0.01,2.6, 3.091, 4.8, 6.30, 9.8

2. (a) 6.64, 6.4, 4.93, 3.29, 3.002, 2.101

(b) 11.61, 9.89, 9.3, 9.2, 8.0, 4.2

(c) 19.020, 14.6, 10.43, 9.8, 7.64, 3.29

(d) 18.5, 18.4, 18, 12.609, 12.39,12

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

(e) > (f) < (g) > (h) <

(i) < (j) < (l) < (i) >

E.x. 6.5

1. (a) ₹ 17.05 (b) ₹ 7.35 (c) 0.60 p (d) 0.72p

(e) 0.40p (f) 0.07 p

2. (a) 18 g

$1\ g = \frac{1}{1000}\ kg$

$18g = \frac{18}{100} = 0.018\ kg$

(b) 450 g

$1g = \frac{1}{1000}\ g$

450 g = 0.450 kg

(c) 5.2 kg 8 g

$1g = \frac{1}{1000}\ kg$

52kg 8g = 52.008 kg

(d) 35

$1g = \frac{1}{1000}\ kg$

3g = 0.003 kg

3. (a) 7 cm

$1\ cm = \frac{1}{100}\ m$

7 cm = 0.07 m

(b) 48 cm

$1\ cm = \frac{1}{100}\ cm$

∴ 48 cm = 0.48 m

(c) 26m 3 cm

$1\ cm = \frac{1}{100}\ m$

26 m 3 cm = 26.0 3m

(d) 15 m 48 cm

$1\ cm = \frac{1}{100}\ m$

15 m 48 cm = 15. 48m

4. (a) 3km 70 m

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

3 km 70 m = 3.070 km

(b) 128 m

$1m\ \frac{1}{1000}\ m$

128 m = 0.128 km

(c) 29 m

(d) 7m

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

29 m 0.029 km 7 m = 0.007 km

E.x. 6.6

1. Weight of Komal = 25.475 kg

Weight of Mahi – 28.075 kg

∴ Total weight = 53.550

2. Milk drank in the morning = 2.15 l

Milk drank in the evening = 1.05 l

Milk drank at night = 0.78 5 l

∴ Total milk drank = 3.985 *l*

3. cost of mango = ₹ 50.45

cost of banana = ₹ 45.60

Money spent on = ₹ 96.05

4. Water in the tank = 46.7 *l*

Water poured in the tank = 18.20 *l*

46.7 *l*

18.20 *l*

64.90 *l*

5. Weight on earth = 52.70 kg

= 142.29

∴ Weight on Jupiter = 194.99 kg

∴ 194.99 kg is weight on jupiter

6. cost of book = ₹ 62.75

cost of pencil box = ₹ 46.25

cost of pen = ₹ 11.75

120.75

7. Cloth bought by Kanika = 126.75 m

cloth bought by Megha = 68.25 m

Total cloth bought = 195.00 m

$\therefore$ 195 m of cloth is bought by both

1. (a) 18.36
21.39
16.25
56.00

(b) 7.893
5.489
6.87
20.252

(c) 17.20
14.42
18.21
49.83

(d) 3.47
2.68
6.15

2. (a) 18.2 + 12.2+0.4
18.2
12.2
0.4
30.8

(b) 5.82 + 3.8
5.82
3.8
9.62

(c) 0.2 + 9 + 12.20
12.20
9.0
0.2
21.4

(d) 153.2 + 15.34
153.2
5.34
168.54

(e) 236.5 + 35.6
236.5
35.6
272.1

(f) 15.01 + 17.1
15.01
17.1
32.11

(g) 24.11 + 6.9
24.11
6.9
31.01

(h) 2.4 + 19.28
2.4
19.28
21.68

(i) 7 + 1.7
7.0
1.7
8.7

3. Perimeter of the figure 5.86 + 2.6 + 1.20 + 1.20 + 13.43 + 4.7 + 4.2
5.86
2.6
4.2

1.20
1.20
13.43
4.7
33.39

∴ Perimeter = 33.39 cm

E.x.6.8

1. (a) 0.37 + 0.29 = 0.66

(b) 3.31 + 1.42 = 4.73

(c) 67.00 + 28.35 = 95.35

(d) 5.08 + 0.37 = 5.45

2. (a) 13.810 − 12.009 = 01.801

(b) 428.342 − 391.67 = 036.65

(c) 23.39 − 19.46 = 03.93

(d) 816.070 − 717.291 = 098.779

(e) 1428.600 − 0.329 = 1428.271

(f) 19.93 − 7.43 = 0.063

(g) 3.78 + 2.12 = 1.66

(h) 4.912 − 0.063 = 4.849

(i) 1421 − 3.631 = 0.790

3. (a) 15.00 − 3.45 = 11.55

4. 135.00 − 39.50 = 95.50

5. 8.6 cm
+ 0.15 cm
8.75 cm

∴ Height of plant on friday = 8.75 cm

E.x. 6.9

1.

	Decimal	X 10	X 100	X 1000
(a)	2.7	27	270	2700
(b)	3.06	30.6	306	3060
(c)	0.519	5.19	51.9	519
(d)	18.25	182.5	1825	18250
(e)	3.007	30.07	300.7	3007
(f)	16.73	167.3	1673	16730
(g)	148.954	1489.54	14895.4	148954

2. (a) 0.04 (b) 0.04 (c) 0.0012 (d) 0.018
(e) 0.048 (f) 0.12

3. (a) 3.45 × 2 = 6.90 (b) 8.39 × 7 = 58.73 (c) 17.42 × 8 = 139.36 (d) 1.236 × 8 = 9.888

(e) 1.4 × 3.2 = 28, 420 → 4.48 (f) 9.7 × 0.8 = 776, 000 → 7.76 (g) 1.23 × 1.8 = 984, 1230 → 2.214 (h) 0.06 × 2.9 = 054, 0120 → 0.174

(i) 44.092 × 4 = 176.368 (j) 3.45 × 2 = 6.90 (k) 3.64 × 0.0 = 0 (l) 0.5 0.7 = 0.35

4. (a) 3.21. × 10 = 32.1 (b) 0.109 × 100 = 109
(c) 1.04 × 100 = 104 (d) 2.7 × 100 = 270
(e) 0.01 × 10 = 0.1 (f) 15.26 × 1000 = 15260

(g) $1.305 \times 100 = 130.5$ (h) $2.002 \times 1000 = 2002$

(i) $2.834 \times 1000 = 2834$ (j) $0.07 \times 100 = 7$

E.x. 6.10

1.

	Number	÷ 10	÷ 100	÷ 1000
(a)	5	0.5	0.05	0.005
(b)	389	38.9	3.89	0.3889
(c)	0.8	0.08	0.008	0.0008
(d)	0.92	0.092	0.0092	0.00092
(e)	4.532	0.4532	0.04532	0.004532

2. (a) ÷ 100 (b) ÷ 10 (c) ÷ 10 (d) ÷ 1000

(e) ÷ 100 (f) ÷ 1000

Sum up

1. (a) (ii) (b) (iii) (c) (iii) (d) (ii)

2. (a) 3.098, 6.839, 8.396, 8.639, 9.398

(b) 7.46, 7.046, 7.064, 7.406, 7.469

3. (a) 9.767, 9.671, 8.761, 8.321, 8.167

(b) 4.632, 4.368, 4.367, 4.363, 4.009

4. Sameer = 15.05 Markers

Bhawana = 15.25 Markers

Shamin = 15.5 Markers

Bhawana Scored the best

5. Distance drove on Monday = 158.3 km

Distance drove on Tuesday = 79.8 km

Distance he drove less on = 158.3 – 79.8

Tuesday

158.3

– 79.8

78.5

∴ Ans = 78.5 km

1.

Full Form	In bigger Units	In smaller Units
38 km 516 m	38.516 km	38516 m
39 km 432 m	39.432 km	39432 m
30 km 5 m	30.5 km	305 m
14 km 903 cm	14.903 km	14903 m
2 km 8 m	2.08 km	208 m

2. (a) 80 mm = 8 cm (b) 9 cm = 90 mm
(c) 20 mm = 2 cm (d) 1000 cm = 10 m
(e) 70 mm = 7 cm (f) 4 km = 4000 m
(g) 3 cm = 30 mm (h) 400 cm = 4 m
(i) 200 cm = 2 m (k) 3 m = 300 cm
(l) 6 m = 600 cm (m) 3000 m = 3 km
(n) 10 km = 1000 m (o) 9 m = 900 cm
(p) 8 m = 800 cm (q) 1 m = 100 cm
(r) 10 mm = 1 cm

E.x. 7.2

1. (a) 90 kg (b) 250 kg (c) 26 g (d) 5 kg
(e) 150 g

Mental Maths

1. d **2.** c **3.** b **4.** e
5. f **6.** a

2. (a) 3.2 kg (b) 6.4 kg (c) 6.5 kg (d) 3.3 kg
(e) 0.715 kg (f) 0.00006 kg (g) 2.375 kg (h) 0.00104 kg
(i) 0.0121 kg (j) 8.008 kg (k) 0.932 kg (l) 0.000 35 kg

E.x. 7.3

1. (a) 5.605 l (b) 1.829 l (c) 0.425 l (d) 8 kl 329 l

(e) 3 dal 925 cl (f) 4 dal 7l 853 ml

2. (a) 250 ml (b) 300 ml (c) 200 ml (d) 5 cl

(e) 12 l

3. (a) 250 ml

$1l = 1000$ ml

$250 \text{ ml} = \frac{250}{1000}$

$= 0.25$ l

(b) 10l 150 ml

$1l = 1000$ ml

$150 \text{ ml} = \frac{150}{1000}$

$= 0.150\ l$

(c) 700 ml

$1l = 1000$ ml

$7000 \text{ ml} = \frac{700}{1000}$

$= 0.700l$

$= 0.7l$

(d) 6l l500 ml

$1l = 1000$ ml

$500 \text{ ml} = \frac{500}{1000}$

$= 0.5\ l$

$bl + 0.5l = 6.5l$

(e) 750 ml

$1l = 1000$ ml

$750 \text{ ml} = \frac{750}{1000}$

$= 0.750l$

$= 0.75l$

(f) 600 ml

$1l = 1000ml$

$600 \text{ ml} = \frac{600}{1000}$

$= 0.600l$

$= 0.6l$

4. (a) 58 kl 95l

$1\text{kl} = 1000l$

$95l = \frac{95}{1000}$

$= 0.095$ kl

$= 58.95$ kl

$58 \text{ kl} + 0.095 \text{ kl}$

$= 58.095$

(b) 25l

$1 \text{ kl} = 1000l$

$25l = \frac{25}{1000}$

$25\ l = 0.025$ kl

(c) $2\text{kl} = 650l$

$1 \text{ kl} = 1000l$

$650l = \frac{650}{1000}$

(d) 5 kl 250l

$1 \text{ kl} = 1000l$

$250\ l = \frac{250}{1000}$

= 0.65 kl

2kl + 0.65 kl

2kl 650l = 2.65 kl

(e) 750l

1 kl = 1000l

$750l = \frac{750}{1000}$

750l = 0.75kl

= 0.25 kl

5kl + 0.25 kl

5kl 250l = 5.25 kl

(f) 7 kl 100l

1kl = 1000l

$100l = \frac{100}{1000}$

= 0.1 kl

7kl + 0.1 kl = 7.1 kl

E.x. 7.4

1. (a)

Km	m
485	378
+ 197	298
682	676

Km m

Ans. = 682 km 676 m

(b)

km	m
569	987
+ 285	876
855	863

km m

Ans. = 855 km 863 m

(c)

Km	m
145	305
+289	817
435	122

Ans. = 435 km 122 m

(d)

km	m	cm	mm
51	219	55	9
812	956	84	5
+64	897	94	8
929	074	35	2

Ans. = 929 km 74 m 35 cm 2mm

(e)

Kl	l	ml
45	305	569
8	707	693
+24	516	295

Ans. =78 kl 532 l 557 ml

(f)

kg	g	mg
49	562	385
856	927	819
+200	896	927

Ans = 110 7kg 38 7g 131 mg

2. (a)

m	cm
82	82
15	72

(b)

m	cm
85	562
70	450

	+19	20			+	384	
	117	74			156	396	

Ans. = 117 m 74 cm

Ans. 156*l* 395 ml

		kg	g	mg		km	m	cm
(c)		15	850	250	(d)	48	175	28
	+	92	921	45		+ 55	800	45
		108	771	295		103	975	73

Ans. = 108kg 771g 295mg

Ans. 103 km 975 m 73 cm

		km	m
(e)		24	856
		15	85
		+9	75
		49	016

Ans. = 49 km 16 m

		km	m			kg	g
3.	(a)	455	298		(b)	325	800
		–185	729			–126	275
		269	569			199	525

Ans. = 269Km 569m

Ans. 199kg 525 g

		l	ml			km	m
(c)		56	297		(d)	185	075
	–	18	189			–96	296
		38	108			88	779

Ans. = 38 l 108ml

Ans. = 88 km 779 m

		kg	g			l	ml
(e)		500	000		(f)	85	085
	–	125	275			29	298
		374	725			55	787

Ans. = 374 kg 725g

Ans. = 55*l* 787 ml

4. (a)

m	cm
924	14
– 457	35
466	79

Ans = 466 m 79 cm

(b)

l	ml
50	212
– 39	215
10	997

(c)

kg	g
800	105
–562	851
237	254

Ans. 327 kg 254 g

(d)

km	m
500	000
–185	215
314	785

Ans. = 314 km 785 m

(e)

m	mm
924	300
– 285	215
639	085

Ans. = 639 m 85 mm

5. (a)

m	cm
15	28
×	7
106	96

Ans. = 106 m 96 cm

(b)

m	cm
105	15
×	8
841	20

Ans. = 841 m 20 cm

(c)

m	cm
12	285
×	9
110	565

Ans. = 110 km 565mm

(d)

m	cm
24	l750
×	4
99	000

Ans. = 99 kg

(e)

kg	g
53	925
×	9
485	325

Ans = 485 kg 325g

(f)

kg	g	mg
42	457	382
	×	6
254	744	292

Ans = 254 kg 744 g 292 mg

6. (a)

kg	g
15	785
×	7
110	495

Ans. = 110 kg 495g

(b)

km	m
78	976
×	8
631	808

Ans. = 631 km 808m

(c)

m	cm
55	32
×	9
497	88

Ans. - 497 m 88 cm

(d)

l	ml
105	319
×	6
631	914

Ans = 631 l 914 ml

(e)

kg	g
24	156
×	8
193	248

Ans = 193 kg 248 g

(f)

l	ml
315	184
×	9
2836	656

Ans = 2836 l 656 ml

7. (a)

$$4\overline{)295.60} = 73.90$$

28
15
12
36
36
00

Ans = 73m 90cm

(b)

$$7\overline{)339.682} = 48.526$$

28
59
56
36
35
18
14
42
42
00

Ans = 48 kg 526g

(c)
$$\begin{array}{r} 28.582 \\ 12\overline{)342.744} \\ 24 \\ \hline 102 \\ 96 \\ \hline 067 \\ 60 \\ \hline 74 \\ 72 \\ \hline 24 \\ 24 \\ \hline \end{array}$$

Ans = 28 km 582 m

(d)
$$\begin{array}{r} 3.25 \\ 18\overline{)58.50} \\ 54 \\ \hline 45 \\ 36 \\ \hline 90 \\ 90 \\ \hline 00 \end{array}$$

Ans = 3m 25cm

(e)
$$\begin{array}{r} 10.431 \\ 50\overline{)521.550} \\ 50 \\ \hline 215 \\ 200 \\ \hline 155 \\ 150 \\ \hline 50 \\ 50 \\ \hline 100 \end{array}$$

Ans = 10l 431 ml

(f)
$$\begin{array}{r} 7.613 \\ 25\overline{)190.325} \\ 175 \\ \hline 153 \\ 150 \\ \hline 32 \\ 25 \\ \hline 75 \\ 75 \\ \hline 00 \end{array}$$

Ans = 7 km 613m

Sum up

1. (a) Milliliter (b) Kilometre

(c) Metre (d) litre

2. (a) True (b) False

(c) True (d) False

(e) True

3. (a)

	Km	m
	56	385
+	147	782
	204	167

Ans = 204 km 167 m

(b)

	km	m
	56	296
	97	847
	154	143

Ans = 154 km 143 m

(c)

l	ml
565	070
– 147	782
417	288

Ans = 417 l 288 ml

3. (a) (iii) (b) (i) (c) (ii) (d) (i)

CHAPTER 08

1. Cost of 10 pens = ₹ 150

∴ Cost of 10 pens = ₹ $\frac{150}{10}$

= ₹ 15

∴ Cost of 1 pen is ₹ 15

2. Cost of 1 quintal of rice = ₹ 750

∴ Cost of 5 quintal = 750 × 5

= ₹ 3750

1 quintal = 100 kg

cost of 100 kg = ₹ 750

∴ cost of 1 kg = $\frac{750}{100}$

= ₹ 7.5

5 quintal of rice cost ₹ 3750

cost of 1 kg k = ₹ 7.5

3. Weight of 6 packets = 1800*g*

of biscuits

∴ weight of 1 packet = $\frac{1800}{6}$

∴ weight of 1 packet is 300 g

4. Distance covered by the bus = 30 km

in one hour

$\therefore$ Distance covered in 5 hours $= 30 \times 5$

5 hours = 150 km

$\therefore$ The bus covers 150 km in 5 hours

5. scooters produced in 10 months = 6500

$\therefore$ scooters produced in 1 month $= \frac{6500}{10}$

$= 650$

$\therefore$ 650 scooters are produced in 1 month.

6. Cost of one colour T.V set = ₹ 15000

$\therefore$ cost of 6 sets $= 15000 \times 6$

$=$ ₹ 90000

$\therefore$ 6 T.V. sets cost ₹ 90,000

7. Number of students a bus can carry = 75

$\therefore$ Number of students in 9 buses $= 75 \times 9$

$= 675$

$\therefore$ 9 buses can carry 675 students

8. Train fare for 3 persons = ₹ 1020

$\therefore$ Fare for each person $= \frac{1020}{3}$

$=$ ₹ 340

Train fare for each person is ₹ 340

9. Toffees distributed among 150 students = 450

Toffees each student got $= \frac{450}{150}$

$= 3$

$\therefore$ Each student got 3 toffees

10. Milk packed in 7 Packets = 1*l* 750 ml

$\therefore$ Milk packed in 1 packet = 1*l* 750 ml $\div$ 7

$\therefore$ 250 ml of milk was packed in each packet

$$
\begin{array}{r}
0.250 \\
7\overline{)\,1.750} \\
\underline{14} \\
35 \\
\underline{35} \\
00
\end{array}
$$

Beat the Clock

	Shaded Squares	Fraction	Decimal	Percent
(a)	6	$\frac{6}{100}$	0.06	6%
(b)	25	$\frac{25}{100}$	0.25	25%
(c)	50	$\frac{50}{100}$	0.50	50%
(d)	75	$\frac{75}{100}$	0.75	75%

Beat the Clock

Ex. 8.2

1. (a) $\frac{6}{100} = 6\%$ (b) $\frac{26}{100} = 26\%$ (c) $\frac{64}{100} = 64\%$

(d) $\frac{2.4}{100} = 2.4\%$ (e) $\frac{156}{100}$ 156%

2. (a) 24% (b) 29% (c) 70%

(d) 85% (e) 2.5% (f) 0.01%

(g) $\frac{23}{4}\%$ or $5\frac{3}{4}\%$ (h) 240% (i) 200%

(j) 100%

3. (a) $\frac{8}{100}$ (b) $\frac{21}{100}$ (c) $\frac{32}{100}$

(d) $\frac{2.5}{100}$ (e) $\frac{89}{100}$ (f) $\frac{300}{100}$

(g) $\frac{700}{100}$ (h) $\frac{100}{300}\%$ (i) $\frac{105}{100}$

4. (a) $\frac{9}{20} \times 100 = 45\%$ (b) $\frac{3}{4} \times 100 = 75\%$

(c) $\frac{7}{10} \times 100 = 70\%$ (d) $\frac{1}{2} \times 100 = 50\%$

(e) $\frac{12}{25} \times 100 = 48\%$ (f) $\frac{41}{50} \times 100 = \frac{220}{3}\%$

(g) $\frac{5}{8} \times 100 = \frac{125}{2}\%$

$= 62.5\%$

(h) $\frac{11}{15} \times 100 = \frac{220}{3}\%$

$= 73\frac{1}{3}\% = 73.3\%$

(i) $\frac{21}{28} \times 100$

$= 75\%$

(j) $\frac{35}{32} = \frac{35}{32} \times 100$

$\frac{875}{8}\%$ or $109\frac{3}{8}\%$ or 109.3%

(k) $2\frac{4}{5} \times 100$

$\frac{14}{5} \times 100$

$= 280\%$

(l) $1\frac{3}{10} = \frac{13}{10} \times 10$

$= 130\%$

5. (a) 24 out of 80

$\frac{24}{80} \times 100 = 30\%$

$= 46.66\%$

(b) 15 out of 75

$\frac{15}{75} \times 100 = 20\%$

(c) 28 out of 60

$\frac{28}{60} \times 100$

$= 46.66\%$

(d) 20 out of 50

$\frac{20}{50} \times 100$

$= 40\%$

(e) 36 out of 150

$= \frac{36}{150} \times 100$

Beat the Clock

1. Profit = ₹75

$\text{Profit \%} = \frac{\text{Profit}}{\text{C. P}} \times 100$

$= \frac{75}{250} \times 100 = 30\%$

2. Profit = ₹1500

$\text{Profit \%} = \frac{\text{Profit}}{\text{C. P}} \times 100$

$$= \frac{1500}{12{,}000} \times 100 = 12.5\%$$

3. Profit = ₹ 500

$$\text{Profit \%} = \frac{\text{Profit}}{\text{C. P}} \times 100$$

$$= \frac{500}{2500} \times 100 = 20\%$$

4. Profit = ₹ 100

$$\text{Profit \%} = \frac{\text{Loss}}{\text{C. P}} \times 100$$

$$= \frac{100}{250} \times 100 = 40\%$$

Ex. 8.3

1. (a) CP = ₹ 150
SP = ₹ 200
SP > CP
∴ Profit
P = SP–CP
= 200 – 150
Profit = ₹ 50

(b) CP = ₹ 325
SP = ₹ 400
SP > CP
∴ Profit
= 400 – 325
P = ₹ 75
∴ Profit = ₹ 75

(c) CP = ₹ 975
SP = ₹ 900
CP > SP
∴ Loss
L = CP – SP
= 975–900
L = ₹ 75
Loss = ₹ 75

(d) CP = ₹ 405
SP = ₹ 390
CP > SP
Loss
L = CP – SP
= 405 – 390
L = ₹ 15
Loss = ₹ 15

(e) CP = ₹ 2580
SP = ₹ 1972
CP > SP

(f) CP = ₹ 90.50
SP = ₹ 121.00
SP > CP

∴ Loss

L = CP – SP

= 2580 – 1972

= ₹ 608

∴ Profit

P = SP – CP

P = 121 – 90.50

P = ₹ 30.50

∴ Profit = ₹ 30.50

(g) CP = 270.40

SP = ₹ 375.05

SP > CP

∴ Profit

P = SP – CP

= 375.05 – 270.40

= 104.65

Profit = ₹ 104.65

(h) CP = ₹ 180.90

SP = ₹ 200

SP > CP

∴ Profit

∴ P = SP – CP

= 200 – 180.90

∴ Profit = ₹ 19.10

(i) CP = ₹ 518

Overhead expenditure = 25.50

∴ Total CP = CP + overheads

= 518 + 25.50

= ₹ 543.50

SP = ₹ 600

SP > CP

∴ Profit

P = SP – CP

= 600 – 543.50

Profit = ₹ 56.50

2. (a) CP = ₹ 425

P = ₹ 105

SP = ?

SP = CP + P

= 425 + 105

SP = ₹ 530

(b) CP = ₹ 268.40

P = ₹ 15.95

SP = ?

SP = CP + P

= 268.40 + 15.95

SP = ₹ 284.35

SP = ₹ 284.35

(c) SP = ₹928
L = ₹26
CP = ?
CP = SP + L
= 928 + 26
CP = ₹ 954

(d) SP = ₹ 500
P = ₹ 40.50
CP = ?
CP = SP – P
= 500 – 40.50
CP = ₹ 459.50

(e) CP = ₹ 195.85
Labour = ₹ 5.60
Total CP = CP + Labour
195.85 + 5.60
Total CP = 201.45
P = ₹ 2.50
SP = 201.45 + 2.50
SP = 203.95
∴ SP = ₹ 203.95

(f) SP = ₹ 1800
P = ₹ 200
Transportation charge = ₹ 50
CP = SP – P – transport
= 1800 – 200 – 50
CP = 1600 – 50
CP = ₹ 1550

3. CP of Pen = ₹ 20.50
SP of pen = ₹ 25
SP > CP
∴ Profit
P = SP – CP
= 25 – 20.50
= 4.50
P = ₹ 4.50

4. Cost of 2 dozen eggs = ₹ 48
i.e. cost of 24 eggs = ₹ 48
∴ cost of 1 egg = 48 ÷ 24
∴ CP of 1 egg = ₹ 2
SP of 1 egg = ₹ 2.25
SP > CP

$\therefore$ Profit

$$P = SP - C P$$
$$= 2.25 - 2$$
$$= 0.25$$

$\therefore$ Profit on 24 eggs $= 0.25 \times 24$

$= ₹ 6$

$\therefore$ She made a profit of ₹ 6

5. CP of cow = ₹ 9125

SP of cow = ₹ 9000

$SP > CP$

$\therefore$ Loss

$$L = CP - CP$$
$$= 9125 - 9000$$
$$L = ₹ 125$$

$\therefore$ He made a loss of ₹ 125

6. CP of the machine = ₹ 20145

Transportation $= 20145 + 125$

$= ₹ 20270$

$P = ₹ 125$

$\therefore \quad P = CP + P$

$= 20270 + 125$

$= 20395$

$SP = ₹ 20395$

$\therefore$ He sold the machine for ₹ 20395 to make a profit of ₹ 125

Sum up

1. (a) (iii) (b) (ii) (c) (i)

2. (a) $6 \times 100 = 600\%$ (b) $7 \times 100 = 700\%$

(c) $2 \times 100 = 200\%$ (d) $1 \times 100 = 100\%$

(e) $4 \times 100 = 400\%$

3. (a) $0.25 \times 100 = 25\%$ (b) $015 \times 100 = 15\%$

(c) $0.43 \times 100 = 43\%$ (d) $0.07 \times 100 = 7\%$

(e) $0.01 \times 100 = 1\%$ (f) $1.4 \times 100 = 140\%$

(g) $2.5 \times 100 = 250\%$ (h) $2.45 \times 100 = 245\%$

(i) $1.09 \times 100 = 109\%$ (j) $0.216 \times 100 = 21.6\%$

4.

Cost Price (C.P)	Selling Price (SP)	Profit/Loss
₹ 70	₹ 50	SP > CP ∴ Profit P = 80 – 70 = ₹ 10
₹ 510	₹ 548	SP > CP ∴ Profit P = 548 – 510 = ₹ 38
₹ 475	₹ 4762	SP > CP ∴ Loss L = 475 – 462 = ₹ 13
₹ 125.50	₹ 128.15	SP > CP ∴ Profit P = 128.15 – 125.50 = ₹ 2.65

5. Cost of 8m cloth = ₹ 96

∴ cost of 1 m = 96 ÷ 8 = ₹ 12

∴ cost of 11 m = 12 × 11

cost of 11 m cloth = ₹ 132

6. Cost of 5 pens = ₹ 75

∴ cost of 1 pen = 75 ÷ 5

∴ cost of 7 pens = 15 × 7

cost of 7 pens = ₹ 105

7. Distance covered by car in 5 hours 175 km

∴ Distance covered in 1 hour = 175 ÷ 5

= 35 km

∴ Distance covered in 8 hours = 35 × 8

= 280 km

∴ The car covers 280 km in 8 hours

8. Cost of 15 *l* of vegetable oil = ₹ 450

∴ cost of 1 *l* of oil = 450 ÷ 15

$= ₹\ 30$

$\therefore$ cost of 10l of oil $30 \times 10 = ₹\ 300$

$\therefore$ 10 l of oil costs ₹ 300

CHAPTER 09

Ex. 9

1. Average marks is 6 subject

$$= \frac{88 + 64 + 89 + 96 + 87 + 80}{6}$$

$$= \frac{504}{6} = 84$$

$\therefore$ Average $= 84$

2. (a) 6 (b) 3 (c) 1.5 (d) 13.5

(e) 5.6

3. (a) 18 (b) 15, 6 (c) 120 (d) 128

(e) Average

4. (a) True (b) True (c) False (d) True

(e) False

5. (a) 8, 12, 14, 18, 21 and 29

$$\text{Average} = \frac{8 + 12 + 14 + 18 + 21 + 29}{6}$$

$$= \frac{102}{6} = 17$$

(b) 30.5, 80.06, 75.2, 81.04 and 69.1

$$\text{Average} = \frac{30.5 + 80.06 + 75.2 + 81.04 + 69.1}{5}$$

$$= \frac{339.5}{5} = 67.18$$

(c) 15, 29, 0, 2, 15, 21, 42 and 18

$$\text{Average} = \frac{15 + 29 + 0 + 2 + 15 + 21 + 42 + 18}{8}$$

$$= \frac{142}{8} = 17.75$$

(d) ₹ 20.75, ₹ 52.20, ₹ 68.25, ₹ 32

$$\text{Average} = \frac{20.75 + 52.20 + 68.25 + 32}{4}$$

$$= \frac{173.2}{4} = 43.3$$

(e) 2m 25 cm, 11m 29 cm, 5m 5 cm and 24 m 85 cm

$$\text{Average} = \frac{2.25 + 11.29 + 5.5 + 24.85}{4}$$

$$= \frac{43.44}{4} = 10.86 = 10\text{m } 86\text{ cm}$$

6. (a) Average of first six whole numbers $= \frac{0 + 1 + 2 + 3 + 4 + 5}{6}$

$$= \frac{15}{6} = 2.5$$

(b) Average of first 5 prime numbers

$$= \frac{2 + 3 + 5 + 7 + 11}{5} = \frac{28}{5} = 5.6$$

(c) Average of first five composite number

$$= \frac{4 + 6 + 8 + 9 + 10}{5} = \frac{37}{5} = 7.4$$

(d) Average of first seven multiple of 9

$$= \frac{9 + 18 + 27 + 36 + 45 + 54 + 63}{7}$$

$$= \frac{252}{7} = 36$$

(e) Do yourself

(f) Average of all factors of 48

$$= \frac{1 + 2 + 3 + 4 + 6 + 8 + 12 + 16 + 24 + 48}{10}$$

$$= \frac{124}{10} = 12.4$$

Ex. 10.1

1.

S.No.	Length	Breadth	Perimeter
(a)	20 cm	30 cm	100 cm
(b)	3 cm	20 cm	46 cm
(c)	40 ft	12 ft	104 ft
(d)	30 m	15 m	90 m
(e)	6 cm	4 cm	20 cm

2. (a) Side = 20 cm

Perimeter of square = $4 \times$ side

$= 4 \times 20$

$= 80$ cm

(b) Side = 6.2 m

Perimeter of square = $4 \times$ side

$= 4 \times 6.2$

$= 24.8$ cm

(c) side = 9.21 cm

Perimeter of square = $4 \times$ side

$= 4 \times 9.21$

$= 36.84$ cm

(d) Side = 5.6 cm

Perimeter of square = $4 \times$ side

$= 4 \times 5.6$

$= 22.4$ cm

(e) Side = 220 cm

Perimeter of square = $4 \times$ side

$= 4 \times 220$

$= 880$ cm

(f) Side = 3.2 cm

Perimeter of square = $4 \times$ side

$= 4 \times 3.2$

$= 12.8$ cm

(g) Side = 41 cm

Perimeter of square = $4 \times$ side

$= 4 \times 41$

$= 164$ cm

(h) Side = 3 cm

Perimeter of square = $4 \times$ side

$= 4 \times 3$

$= 12$ cm

(i) Side = 18 cm

Perimeter of square = $4 \times$ side

$= 4 \times 18$

$= 72$ cm

(j) Side = 11 cm

Perimeter of square = $4 \times$ side

$= 4 \times 11$

$= 44$ cm

3. (a) $l = 36$ cm, $b = 29$ cm

Perimeter of rectangle $= 2(L + B)$

$= 2(36 + 29)$

$= 2(65)$

$\therefore$ Perimeter = 130 cm

(b) $l = 2$ m, $b = 1$ m

Perimeter os rectangle $= 2(L + B)$

$= 2(2 + 1)$

$= 2(3)$

$\therefore$ Perimeter = 6 m

(c) $l = 5.8$ m, $b = 3$ cm

Perimeter of rectangle $= 2(L + B)$

$= 2(5.8 + 3)$

$= 2(8.8)$

$\therefore$ Perimeter $= 17.6$ m

(d) $l = 16$ m, $b = 12$ cm

Perimeter of rectangle $= 2(L + B)$

$= 2(16 + 12)$

$= 2(28)$

$\therefore$ Perimeter $= 56$ m

6. (a) Perimeter of square $= 80$ cm

Side of square $=$ Perimeter $\div 4$

$= 80 \div 4$

$= 20$ cm

$\therefore$ Side of square $= 20$ cm

(b) Length of rectangle $= 110$ cm

Breadth of rectangle $= 35$ cm

$\therefore$ perimeter of rectangle $= 2\ (L + B)$

$= 2(110 + 35)$

$= 2(145)$

$\therefore$ Perimeter $= 290$ cm

(c) Length of field $= 40$cm

Perimeter $= 230$ cm

Breadth $= ?$

$\text{Perimeter} = 2(L + B)$

$230 = 2(40 + B)$

$\frac{230}{2} = 40 + B$

$115 = 40 + B$

$40 + B = 115$

$B = 115 - 40$

$B = 75$

$\therefore$ Breadth of field is 75 cm

(d) Side of square garden = 40

$\therefore$ Perimeter of garden = $4 \times 40 = 160$

$\therefore$ Distance covered in 3 rounds

$= 3 \times$ perimeter

$= 3 \times 160$

$= 480$

(e) Perimeter of rectangular plot = 270 m

Breadth = 60 m

Length = ?

Perimeter = 270

$2(l + b) = 270$

$2(l + 60) = 270$

$L + 60 = \frac{270}{2}$

$L + 60 = 135$

$L = 135 - 60$

$= 75$ m

$\therefore$ Length of Plot = 75 m

Mental Maths

1. Total length of wire = 55 m
2. Area of rectangle $= L \times B$

   $= 15\text{m} \times 3\text{m} = 45\text{m}^2$

   Area of square = side $\times$ side

   $= 3\,\text{m} \times 3\,\text{m} = 9\,\text{m}^2$

Ex. 10.2

1. (a) 180 sq.m (b) 54 sq.m

(c) 300 sq.cm (d) 84 1890 sq.cm

(e) 40 sq.cm

2. Do Yourself

3. Length of the carpet = 4m

Breadth of carpet = 2.5 m

$\therefore$ Area of 1 carpet = $L \times B$

$= 2.5 \times 4$

$= 10$ sq. m

$\therefore$ Area of 26 carpets = 26×10

$= 260$ sq.m

$\therefore$ Area of the floor of hall = 260 sq.m

4. Length of block = 25 cm

Breadth of block = 12 cm

$\therefore$ Area of 1 block = 12×25

$= 300$ sq.cm

$= 3$ sq. cm

Area of floor = $L \times B$

$= 125m \times 4.8$ m

$= 600$ sq.m

$\therefore$ Number of blocks = Area of floor/Area of 1 block

$= \frac{600}{3} = 200$ blocks

$\therefore$ 200 blocks are required

5. Side of square = 8 m

$\therefore$ Area of square = side $\times$ side

$= 8 \times 8$

$= 64$ sq.m

Ex. 10.3

1. Length of the carpet = 8.5 m

Breadth of carpet = 7 cm

$\therefore$ Area of carpet = $L \times B$

$= 8.5 \times 7 = 59.5$ sq.m

$\therefore$ Area of carpet is 59.5 sq.m

2. Side of square-shaped painting = 3.6m

$\therefore$ Area of painting = side $\times$ side

$= 3.6 \times 3.6$

$= 12.96$ sq.m

3. Perimeter of frame = 80 cm

$\therefore$ Lenght of each side $= \frac{80}{4}$

$= 20$ cm

4. Perimeter of square play field = 240 cm

$\therefore$ Lenght of side $= \frac{\text{Perimeter}}{4} = \frac{240}{4} = 60$ cm

5. Do Yourself

Sum up

1. Do Yourself

2. Side of square = 16 cm

$\therefore$ Area = side $\times$ side

$= 16 \times 16$

$= 256$ sq.cm

Perimeter = side $\times$ 4

$= 16 \times 4$

$= 64$ cm

(b) Length = 12 cm

Breadth = 8 cm

$\therefore$ Area of rectangle = $L \times B$

$= 12 \times 8$

$= 96$ sq. cm

Perimeter of rectangle = $2(L + B)$

$= 2(12 + 8)$

$= 2(20)$

$= 40$ cm

(c) Side of square = 10 cm

$\therefore$ Area of square = 10×10

$= 100$ sq.cm

Perimeter of square = $4 \times$ side

$= 4 \times 10 = 40$ cm

(d) Length = 14 cm

Breadth = 9 cm

$\therefore$ Area of rectangle = $L \times B$

$= 9 \times 14 = 126$ sq.cm

Perimeter of rectangle = $2(L + B)$

$= 2(14 + 9)$

$= 2(23) = 46$ cm

3. Area of squared room = 49 sq.cm

$\therefore$ Area = side $\times$ side

$49 = (\text{side})^2$

$\therefore$ side = 7 cm

$\therefore$ side of the square room = 7 cm

4. Length of floor = 20 ft

Breadth of floor = 14.5 ft

$\therefore$ Area of floor = $L \times B$

$= 20 \times 14.5 = 290$ sq.ft

$\therefore$ Area of the floor is 290 sq ft

CHAPTER 11

Mental Maths

(a) 3 cm^3 (b) 4 cm^3 (c) 5 cm^3

(d) 6 cm^3 (e) 10 cm^3 (f) 8 cm^3

(g) 14 cm^3 (h) 15 cm^3

Ex. 11.1

Do Yourself

1. (a) Length = 12 cm

breadth = 4 cm

height = 2 cm

Volume $l \times b \times h = 12 \times 4 \times 2 = 96$ cu.cm

(b) Length = 6 cm

breadth = 3 cm

height = 4 cm

volume = $l \times b \times h = 6 \times 3 \times 4 = 72$ cu.cm

(c) length = 10 mm

breadth = 4 mm

height = 6 mm

Volume = $l \times b \times h$

$= 10 \times 4 \times 6 = 240$ cu.mm

2.

S.No.	Length	Breadth	Height	Volume
(a)	4 cm	2 cm	3 cm	24 cu.cm
(b)	0.05 cm	3 cm	4 cm	0.6 cu.cm
(c)	10 cm	2.6 cm	2 cm	52 cu.cm

3. (a) 2340 cu.mm (b) 1650 cu.mm

(c) 378 cu.mm

4.

S.No.	Length	Breadth	Height	Volume
(a)	24 m	3 m	5 m	360 cu.m
(b)	144 cm	4 cm	12 cm	6912 cu.cm
(c)	148 cm	5 cm	16 cm	11840 cu.cm
(d)	16 cm	2 cm	4 m	128 cu.cm
(e)	210 cm	5 cm	35 m	36750 cu.cm

5. length of book = 24 cm

Breadth of book = 14 cm

Height of book = 2 cm

$\therefore$ Volume of 1 book = $l \times b \times h$

$= 24 \times 14 \times 2 = 24 \times 28$

$= 672$ cu.cm

$\therefore$ volume of 2 books = $672 \times 2 = 1344$ cu.cm

6. length of drawer = 30 cm

Breadth of drawer = 45 cm

height of drawer = 10 cm

$\therefore$ volume of drawer = $l \times b \times h$

$= 30 \times 45 \times 10 = 13500$ cu.cm

Ex. 11.3

1. Do Yourself

2. (a) (iv) (b) (iii) (c) (ii) (d) (i)

Sum up

1. (a) $l = 7$ cm; $b = 2$ cm; $h = 2$ cm

$\therefore$ volume = $l \times b \times h$

$= 7 \times 2 \times 2$

$= 28$ cu.cm

(b) $l = 6$ cm

$b = 4$ cm

$h = 2$ cm

$\therefore$ volume = $l \times b \times h = 6 \times 4 \times 2$

$= 48$ cu.cm

(c) $l = 3.5$ cm

$b = 1.5$ cm

$h = 0.5$ cm

$\therefore$ volume = $l \times b \times h = 3.5 \times 1.5 \times 0.5 = 2.625$ cu.cm

2. Do Yourself

3. Edge of cubical box = 9 cm

$\therefore$ volume = $9 \times 9 \times 9 = 729$ cu.cm

4. volume of cuboidal box = $4000\ cm^3$

length = 40 cm

breadth = 25 cm

height = ?

volume = $l \times b \times h$

$4000 = 40 \times 25 \times h$

$\frac{4000}{40 \times 25} = h$

$h = 4$ cm

$\therefore$ Height of cuboidal box is 4 cm

Ex. 12.1

1. Do Yourself

2. Do Yourself

3. (a) False (b) True (c) True (d) False

(e) False

4. (a) 8 line segments

AB, *BC*, *CD*, *DE*, *EF*, *EG*, *GH*, *HI*, *IJ*, *JK*, *KL*, *LA*

(b) 12 line segments.

AB, *BC*, *CD*, *DE*, *EF*, *FG*, *GH*, *HI*, *IJ*, *JK*, *KL*, *LA*

(c) 6 line segments

AB, *BC*, *CD*, *DE*, *EF*, *FA*

5. (a) Rays : *BA*, *DE*

Line segments : *BC*, *CD*

(b) Rays : PS, PT, QS, RT

Line segments : PQ, QR, PR

(c) Rays : AB, BA, CD, DC

Line segments : EF

Ex. 12.2

Dy Yourself

Ex.12.3

1. (a) Point P (b) $\angle PQR$

2. (a) L^L (b) L^L (c) $\overrightarrow{LM}$, $\overrightarrow{LN}$

3. (a) $\angle ABE$, $\angle EBC$, $\angle ECD$, $\angle AED$

(b) B; $\overrightarrow{BC}$, $\overrightarrow{BA}$

(c) $\angle ADB$

4. Do Yourself **5. Do Yourself**

Ex. 12.4

1. (c), (d) **2.** (a), (b), (c)

3. DO Yourself **4.** 808, 1001, 888

Ex. 12.5

1. (a) One third (b) One third (c) One sixth

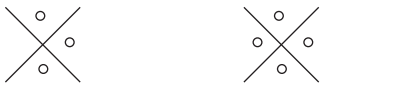
(d) One Sixth (e) one third (f) One third

2. Do Yourself

Ex. 12.6

1. Do Yourself

2. (a) 

(b) 

3. Do Yourself **4. Do Yourself**

Sum up

1. (a) (iv) (b) (ii) (c) (ii) (d) (iv)

2. Do Yourself **3. Do Yourself**

CHAPTER 13

Mental Maths

(b) twenty minutes to two (c) four minutes to four

(d) ten minutes to ten (e) three minutes to twelve

(f) twenty-five minutes to nine (g) nine minutes to five

(h) twenty minutes to seven

Ex. 13.1

	12-hour clock	24-hour clock
1.	7 : 30 am	0730 hours
2.	5 : 30 pm	1730 hours
3.	12 : 03 pm	1203 hours
4.	10 : 50 am	1050 hours
5.	4 : 45 pm	1645 hours

Ex. 13.2

1. (a) 60 (b) 1 (c) 120 (d) 180

(e) 48 (f) 6 (g) 60 (h) 1

2. (a) 2 hours 15 minutes

1 hours = 60 minutes

$\therefore$ 2 hours = 2×60

= 120 minutes

12 hours 15 minutes = 120 + 15

= 135 minutes

(b) 5 hours 5 minutes

1 hour = 60 minutes

5 hours = $60 \times 5 = 300$ minutes

$\therefore$ 5 hours 5 minutes = $300 + 5 = 305$ minutes

(c) 10 hours 10 minutes

1 hours = 60 minutes

10 hours = $10 \times 60 = 600$ minutes

10 hours 10 minutes = $600 + 10 = 610$ minutes

(d) 5 hours 59 minutes

1 hours = 60 minutes

5 hours = $5 \times 60 = 300$ minutes

(e) 11 hours 44 minutes

1 hour = 60 minutes

11 hours = $11 \times 60 = 660$ minutes

11 hours 44 minutes = $660 + 44 = 704$ minutes

3. (a) 5 days

1 days = 24 hours

5 days = 24×5

= 120 hours

(b) 720 minutes

1 hours = 60 minutes

720 minutes = $\frac{720}{60}$

720 minutes = 12 hours

(c) 5400 minutes

1 hours = 60 minutes

5400 minutes = $\frac{5400}{60}$

= 90 hours

(d) 30 minutes

1 hours = 60 minutes

$\therefore$ 30 minutes = $\frac{30}{60} = \frac{1}{2}$ hours

(e) 180 minutes

1 hours = 60 minutes

180 minutes = $\frac{180}{60} = 3$ hours

4. 3 weeks 48 hours

1 week = 7 days

3 weeks = $3 \times 7 = 21$ days

48 hours = $\frac{48}{24} = 2$ days

$\therefore$ 3 weeks 48 hours = $21 + 2 = 23$ days

(b) 15 weeks

1 week = 7 days

15 weeks = $15 \times 7 = 105$ days

(c) 7 weeks

1 week = 7 days; 7 weeks = $7 \times 7 = 49$ days

(d) 48 hours

1 days = 24 hours; 48 hours = $\frac{48}{24} = 2$ days

(e) 96 hours

1 days = 24 hours; 96 hours = $\frac{96}{24} = 4$ days

Ex. 13.3

1. (a)

hours	minutes
14	29
+25	24
39	53

Ans. = 39 hours 53 minutes

(b)

hours	minutes
16	28
+17	100
33	12.8 (128–120)

Ans. = 35 h 8 min

(c)

hours	minutes
21	36
19	45
40	81

Ans. = 41 h 21 min

(d)

hours	minutes	sec
24	21	15
+16	35	40
40	56	40

Ans. = 40h 56 min 55 sec

(e)

hours	minutes	seconds
12	45	34
10	39	49
22	84	83

Ans. = 23 hours 15 minutes 23 sec

2. Subtract

(a)

hours	minutes
26	38
19	29
7	09

Ans. = 7 h 9 min

(b)

hours	minutes
24	51
17	56
6	55

Ans. = 6 h 55 min

(c)

hours	minutes
20	30
–16	46
3	44

Ans = 3 hours 44 min

(d)

hours	minutes	sec
21	15	49
– 10	27	24
10	48	25

Ans = 10 hrs 48 min 25 sec

(e)

hours	minutes	seconds
30	05	01
– 15	16	27
14	48	34

Ans = 14 hours 48 min 34 sec

3.

(a)

hr	min
49	06
+9	57
59	03

$\therefore$ 59 h 03 min

(b)

hours	minutes	seconds
27	38	38
31	42	49
58	80	87
59	21	27

Ans = 59 hours 21 minutes 27sec

(c)

hours	minutes	Seconds
38	38	38
+37	37	37
76	16	15

Ans = 76 hours 16 minutes 15 sec

(d)

Hours	minutes	seconds
29	1	2
+30	58	59
60	00	1

Ans. 60 hours 1 sec

4. (a) 75 seconds = 1 minute and 15 seconds

(b) 84 seconds = 1 minutes and 24 seconds

(c) 92 minutes = 1 hour and 32 minutes

(d) 135 minutes = 2 hours and 15 seconds

(e) 105 minutes = 1 hour and 45 seconds

(f) 125 seconds = 2 minutes and 5 seconds

(g) 53 hours = 2 days 5 hours

5.

(a)

	minutes	seconds
	46	45
–	12	48
	33	57

Ans. = 33 minutes and 57 seconds

(b)

	Hours	minutes
	20	24
–	15	27
	4	57

Ans. 4 hours 57 minutes

(c)

	Hours	minutes
	28	29
–	14	50
	13	39

Ans. = 13 hours 39 minutes

(d)

	minutes	seconds
	39	4
–	10	32
	28	32

Ans = 28 min 32 sec

(e)

	hours	minutes
	32	16
–	28	44
	03	32

Ans. = 3 hours 32 min

Ex. 13.4

1. (a) 3 hours 42 minutes after 0825 hours

8 h 25 min + 3h 42 minutes

= 11 h 67 min = 12 h + 7 min = 12 : 07 pm

(b) 6 hours 25 min after 1612 hours

= 22 hours 37 min = 10 : 37 p.m

(c) 2 hours 35 min before 1315 hours

= 1315 hours – 2 hours 35 min

= 1040 hours = 10 : 40 am

(d) 3 hours 40 min after 1825 hours

= 1825 hours + 3 hours 40 min

= 21 hours 65 min = 21 hours + 1 hours 5 min

= 22 hours + 5 min = 10 : 05 pm or 2205 hours

(e) 7 hours 50 min before 0810 hours

0810 hours—7 hours 50 min = 0020 hours

(f) 12 hours before 1500 hours

= 1500 hours – 12 hours = 0300 hours

2. 0815 hours to 1945 hours

Elapsed time = 19 hours 45 minutes

– 80 hours 5 minutes

11 hours 30 minutes

Ans. 11 hours 30 minutes

(b) 10 : 00 am to 4 : 40 p.m.

elapsed time = 16 hours 40 min (4 : 40 pm=1640hours)

– 10 hours 00 min (10 : am = 1000 hours)

6 hours 40 min

Ans = 6 hours 40 min

(c) Elapsed time = 23 hours 02 minutes

– 12 hours 05 minutes

10 hours 57 minutes

Ans - 10 hours 57 minutes

(d) Elapsed time = 14 hours 00 min (2 : 00 pm = 1400 hours)

– 01 hours 15 min (1 : 15 am = 0115 hours)

12 hours 45 min

3. Expected departure of flight = 1025 hour

(15 minutes late) = + 15 min

1040 hours

Expected Arrival = 1320 hour

(19 minutes late) = + 19 min

1339 hours

Time of the Journey = 1339 hours − 1040 hours

13 hours 39 min

− 10 hours 40 min

2 hours 59 min

Ans = 2 hours 59 min

Ex. 13.5

1. (a) 5 years 8 months

11 years 9 months

16 years 17 months

16 years 17 months

= 16 years + 1 years 5 months = 16 years + 1 years 5 months

Ans = 17 years 5 months

(b) 18 years 10 months

+4 years 5 months

22 years 15 months

22 years 15 months

= 22 years + 1 months

= 22 years + 1 year 3 months

Ans = 23 years 3 months

(c) 16 years 9 months

− 5 years 11 months

10 years 10 months

Ans = 10 years 10 months

(d) 8 weeks 8 days

− 4 weeks 4 days

4 years 5 days

Ans = 4 weeks 5 days

2. Present age of mother = 26 years 2 months

Present as of Riya = 4 years 4 months

Age of mother at time of Riyas birth

26 years 2 months
4 years 4 months
21 years 10 months

∴ Age of mother at time of Riya's birth = 21 years 10 month

3. My Present age = 43 years 2 months

Age at the time = 21 years 5 months

I started teaching

Time I have been teaching

43 years	2 months (12 + 2)
21 years	5 month
– 21 year	5 months

I have been teaching since 21 years 9 months

4. Present Age of sister = 27 years 8 months

Difference between Anaya = 10 years 6 months

and her sister age

Ananya's Present age

27 years 8 months

+ 10 years 6 months

37 years 14 months

∴ Ananya's present age = 37 years 14 months

= 37 years + 1 year 2 months

= 38 years 2 months

5. Total time to complete 2 assignments = 4 weeks

Time taken for first assignment = 2 weeks 3 days

∴ Time taken for second assignment

4 weeks	0 days
– 2 weeks	3 days
1 week	4 days

∴ Time taken for second assignment is 1 week 4 days

6. Age of Sangita = 40 years

∴ Brother age = 40 years – 14 years 8 months

	40 years	00 months (12 months)
–	14 years	08 months
	25 years	4 months

∴ Age of brother is 25 years 4 months

7. Present age of Vishal

	13 years	00 months (12)
–	2 years	90 months
	10 year	3 months

∴ Vishal's present age = 10 years 3 months

8. Total duration of holidays = sweets 3 months

Time spent in Nainital and Dehradun

	1 week	4 days
+	3 weeks	5 days
	4 weeks	9 days

∴ Time spent in Mussorie

	8 weeks	3 days (7 + 3)
–	4 weeks	9 days
	3 weeks	1 days

∴ Somi spent 3 weeks 1 days in mussorie

Sum up

1. (a) 0240 h (b) 0500 h
(c) 0630 h (d) 1045 h
(e) 0001 h (f) 0059 h
(g) 1230 h (h) 1345 h
(i) 1650 h (j) 0059h
(k) 2030 h (l) 0420 h

2. (a) 0 : 10 am (b) 2 : 15 pm
(c) 1 : 20 pm (d) 1 : 45 am
(e) 12 : 25 pm (f) 0 : 55 am

3. 3 hours 25 minutes after 9 : 20 am

= 0920 hours + 3 hours 25 min = 1245 hours

Ans. = 12 : 45 pm

4. 5 hours 12 minutes after 1 : 50 pm

1:50 pm = 1350 hours

1350 hours + 5 hour 12 min

= 1862 hours = 1902 hours = 7 : 02 pm

5. 2 hours 40 minutes before 9 : 20 pm

21 hours	20 min (9 : 20 pm = 21 hours 20 min)
– 2	40
18 hours 40 min	

= 18 hours 40 min = 6 : 40 p.m

Ans. = 6 : 40 pm or 1840 hours

6. 4 hours 28 min before 7 : 55 am

7 hours	55 minutes
– 4 hours	28 minutes
3 hours	27 minutes

Ans. = 0327 hours or 3 : 27 am

Ex. 14.1

1. (a) 15 bottles (b) sprite, 50 bottles

(c) 50 bottles (150 – 100) (d) 550 bottles

2. Do Yourself

3. Do Yourself

4. (a) 6 children (b) 3 children

(c) Horror (d) 15 children

(e) 18 children (f) adventure

(g) 9 children (h) 12 children

(i) horror = 24 children (j) comedy = 18 children

adventure = 18 children horror = 24 children

Ex. 14.2

1.

Fruits	Tally marks	Number of Students
Apple	𝍸	5
Pear	𝍷	4
Orange	𝍸 𝍷	9
Banana	𝍸 |	6
Grapes	|||	3
Chiku	||	2
Water melon	|	1

1. Orange 2. Watermelon
3. Watermelon, chiku, Grapes, pear, Apple, Banana, Orange

2. Do it Yourself

3. Do it Yourself

4. (a) Potato salad (b) Cheese and Onion
(c) Potato and Onion (d) 13
(e) 13.5 (f) 9

5. (a) 22 (b) 7 (c) 8
(d) 48 (e) 31 (f) 42
(g) 49 (h) 24 (i) 17
(j) 6

6. (a) 30 (b) Thursday (c) No day
(d) Wednesday, Thursday, Sunday (e) 19, (f) 24
(g) No day (h) Wednesday (i) Monday
(j) Monday

7. (a) 𝍸 𝍸 𝍸 (b) 𝍸 𝍸 |||
(c) 𝍸 𝍷 (d) 𝍸 𝍸 ||
(d) 𝍸 𝍸 𝍸 𝍸 ||

Maths MAGIC

Interactive Resources

- Download the free app 'Green Book House' from google play.
- Free online support available on 'www.greenbookhouse.com'.
- Ample teacher's support available.

GREEN BOOK HOUSE
(EDUCATIONAL PUBLISHER)
F-214, Laxmi Nagar, Mangal Bazar, Delhi-110092
Phone : 9354766041, 9354445227
E-mail : greenbookhouse214@gmail.com
Website: www.greenbookhouse.com