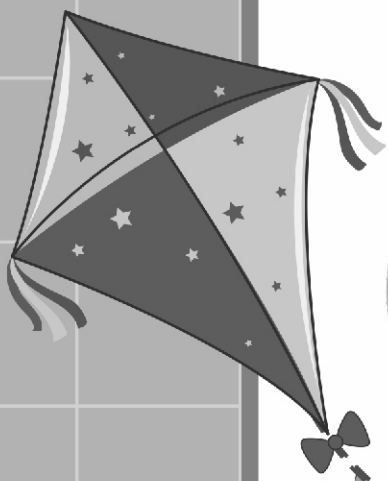
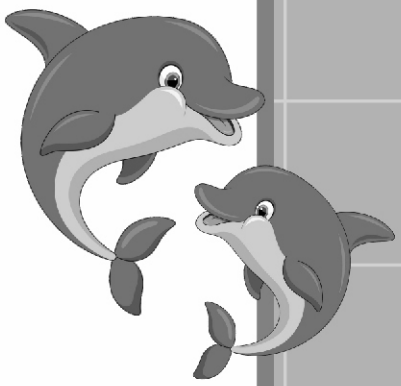
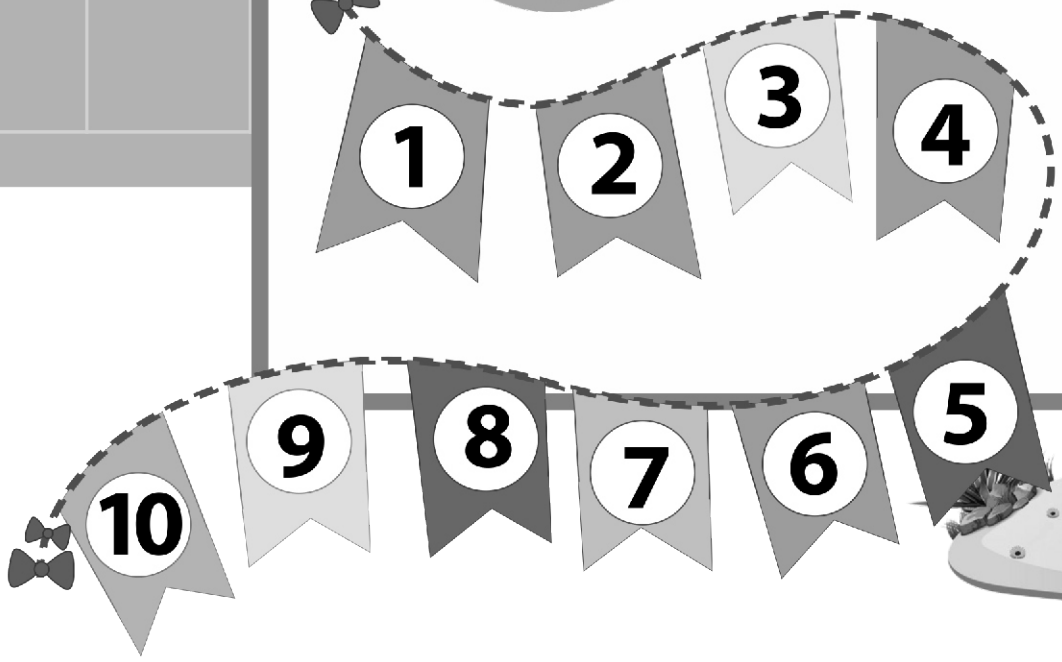
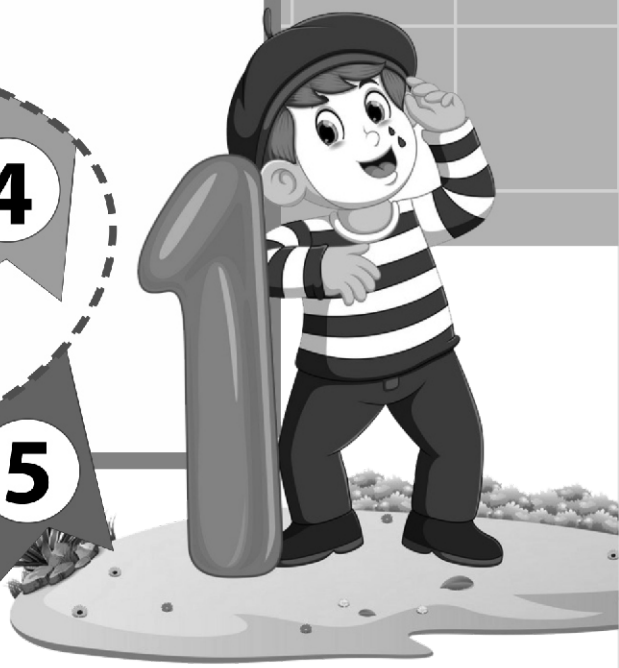
3 − 2 = 1

Foundation Mathematics 4









1. Know your Numbers

Task-1

1. (a) 32041 → Thirty two thousand and forty one
(b) 35342 → Thirty five thousand three hundred and forty two
(c) 95024 → Ninety five thousand and twenty four

2. Do yourself.

Task-2

1. (a) Seventy eight lakh fifty six thousand five hundred twenty one.
(b) Ninety nine lakh ninety thousand ninety.
(c) Four lakh six thousand fifty five.

2. (a) Six lakh six thousand eight hundred sixty five.
(b) Four lakh fifty thousand six hundred.
(c) Six lakh thirty thousand.

Learning Target 1.1

1. (a) Six hundred thousand five hundred thirty four.
(b) Five hundred four million eight thousand six hundred thirty.
(c) Eight hundred forty three million sixty thousand sixty three.

2. (a) Three hundred eighty four thousand four hundred seventy one.
(b) Four million five hundred five thousand eight hundred seventy.

Task-3

1. 1 lakh **2.** 1 million **3.** 5 crores **4.** 8 lakhs

Learning Target 1.2

1. (a) $4 \times 1000 = 4000$ (b) $1 \times 100000 = 100000$
(c) $8 \times 100 = 800$ (d) $1 \times 1000000 = 1000000$

2. (a) $5 \times 100 = 500$ (b) face value is the number itself = 6
(c) $3 \times 1000 = 3000$ (d) face value is the number itself = 5

3. Place value of both 4s are 400000 and 400

4. 6 on left place value = 60000
6 on right place value = 600
Hence, 6 left is 100 time greater $\therefore\ 600 \times 100 = 60000$

5. (b) 745343 → Place value of 5 is $5 \times 1000 = 5000$
(c) 542100 → Place value of 4 is $4 \times 10000 = 40000$
(d) 824542 → Place value of 8 is $8 \times 100000 = 800000$

Task-4

1. (a) 5 ten thousands + 7 thousand + 1 hundred + 3 tens + 6 ones
(b) 3 lakh + 6 ten thousand + 2 thousand + 3 hundred + 1 tens + 0 ones
(c) 45871 (d) 58321

2. (a) 30000 + 4000 + 200 + 60 + 5
(b) 800000 + 20000 + 50 + 2
(c) 30000 + 400 + 5
(d) 300000 + 20000 + 1000 + 400 + 30 + 5

3. (a) 85452 (b) 9446 (c) 700099

Learning through puzzle

4268

Learning Target 1.3

		TL	L	TTH	TH	H	T	O
1. (a) 43,24,118 < 44,24,118 →		4	3	2	4	1	1	8
		4	4	2	4	1	1	8
(b) 64,38,005 > 64,28,005 →		6	4	3	8	0	0	5
		6	4	2	8	0	0	5

2. (a) 5636 < 6532 < 15000 < 15007 < 130000
(b) 20111 < 22022 < 22200 < 22201 < 200200

3. (a) 344326 > 324165 > 256513 > 234561 > 23436
(b) 51890 > 50800 > 50360 > 48520 > 41725

Task-5

1. (a) 103478 (b) 874310 (c) 874301

2.

	Predecessor	**Successor**
(a)	432933	432935
(b)	909008	909010
(c)	199999	200001

Learning through puzzle

444320 — Largest 6 digit number using digit
+ 20034 — Smallest 5 digit number using digit
464354

Task-6

1. (a) 172100 (b) 168400 (c) 235600

2. (a) 730000 (b) 345000 (c) 601000

Just 4 fun

Do yourself.

Learning Target 1.4

1. (a) 37 (b) 10 (c) 14 (d) 22
2. (a) R (b) W (c) R (d) W
3. (a) < (b) > (c) = (d) <
4. (a) XI (b) XVIII (c) XVI (d) XXIII

Task-7

1. (a) $5650, \overset{+10}{} 5660, \overset{+10}{} 5670, \overset{+10}{} 5680$
(b) $11{,}400, \overset{+50}{} 11450, \overset{+50}{} 11{,}500, \overset{+50}{} 11550$

Catch The Concept

1.

TL	L	TTh	Th	H	T	O
1	2	3	5	6	4	6
2	4	8	3	2	1	6

2. (a) **Indian System :** Forty three lakh twenty thousand five hundred and thirty five
International System : Four million three hundred twenty thousand five hundred and thirty five
3. (a) 2000000 + 500000 + 60000 + 3000 + 400 + 20 + 6
(b) 4000000 + 30000 + 5
4. (a) 3243620
(b) 4036819
5. (a) 45,627 < 45, 800
(b) 77,594 < 78,888
(c) 3,74,582 > 76,877
6. (a) 25 > XIX
(b) XXX < 32
(c) XX = 20

Apply Your Mind!

1. 70608 = 70 thousand + 6 hundred + 8 ones
2. =
3.

(a)	(b)	(c)
>	<	>

❑

2. Addition

Learning Target 2.1

1. (a)

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

(b)

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

(a)

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

2. (a)

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

(b)

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

(c)

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

3. (a)

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

(b)

	TTh	Th	H	T	O
	3	2	6	2	5
		1	0	9	6
+	5	3	0	0	2
	8	6	7	2	3

4. (a) 27 thousands + 34 thousands + 23 tens

27000
34000
+ 230
61230

Task-1

1. (a)

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

(b)

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

(c)

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

2. (a) 274 more than 15742 = 15742 + 274 = 16016
(b) 73 more than 16787 = 16787 + 73 = 16860

Learning through puzzle

Sum of all horizontal, vertical and diagonal line are same.

Task-2

1. 0 **2.** 5333 **3.** 75326 **4.** 10000
5. 20 **6.** 1976 **7.** 720 **8.** 229
9. 563 **10.** 829 **11.** 5649

Just 4 fun

Do yourself.

Learning Target 2.2

1.

Tourists visited in May	42460
Tourists visited in June	62510
Tourists visited in July	+ 82168
Total tourists	187138

2.

Mr. John withdraw money from bank on Ist day	= ₹ 42180
Mr. John withdraw money from bank on 2nd day	= ₹ 41000
Mr. John withdraw money from bank on 3rd day	= + ₹ 52545
Total amount withdraw	= ₹ 135725

3. Arun bought a cottage = ₹ 416400
Arun bought a car = ₹ 324100
Arun bought a L.C.D. = ₹ 32000
Arun bought a factory = + ₹ 636500
Total money spent by arun = ₹ 1409000

4. Number of children appeared in year 2012 = 21623
Number of children appeared in year 2013 = + 24526
Total number of children = 46149

5. Visitors visited mall in May = 695860
Visitors visited mall in June = + 725654
Total number of visitors = 1421514

Task-3

1. (a) Approximate answer = 400 + 400
Actual sum = 819
(b) Approximate answer = 1000 + 1000
Actual sum = 2018
(c) Approximate answer = 30000 + 5000
Actual sum = 37322

Catch The Concept

1. (a) 5795 (b) 11295 (c) 13818

2. (a) 0 (b) Addend
(c) Smallest 7-digit number

3. (a)
$$\begin{array}{r} 32937 \\ 6273 \\ 5606 \\ 1856 \\ +\ 26246 \\ \hline 72918 \end{array}$$

(b)
$$\begin{array}{r} 354321 \\ 282469 \\ +\ 121330 \\ \hline 758120 \end{array}$$

4. Money spent for digging a tube well = ₹ 284500
Money spent on medical help = + ₹ 163000
Total money spent = ₹ 447500

Apply Your Mind!

1. 75

2. In series their is + 3, + 5, + 7, + 9 and so on
36, 39, 44, 51, 60, 71, 84

3. 1 column = 10
So, 3 column + 20 column + 300 column
$= 3 \times 10 + 20 \times 10 + 300 \times 10$
$= 30 + 200 + 3000 = 3230$

❑

3. Subtraction

Learning Target 3.1

1. (a)

TTh	Th	H	T	O
1	7	5	1	5

(b)

TTh	Th	H	T	O
4	2	4	1	2

(c)

TTh	Th	H	T	O
3	2	4	7	4

(d)

L	TTh	Th	H	T	O
3	1	0	8	1	7

(e)

L	TTh	Th	H	T	O
1	4	2	6	7	9

(f)

L	TTh	Th	H	T	O
2	3	1	7	6	3

2. (a)

Minuend	36821
Subtrahend	− 14240
	22581

(b)

Minuend	903265
Subtrahend	− 631492
	271773

3. (a) $8888 - 1234 = 7654$
(b) $4832 - 100 = 4732$
(c) $60000 - 9099 = 50901$
(d) $10000 - 36 = 9964$

Task-1

1.
$$\begin{array}{r} 86523 \\ -\ 28712 \\ \hline 57811 \end{array}$$

2.
$$\begin{array}{r} 77738 \\ -\ 43425 \\ \hline 34313 \end{array}$$

3.
$$\begin{array}{r} 754896 \\ -\ 006984 \\ \hline 747912 \end{array}$$

Task-2

1. (a) Subtrahend = 767786
$\therefore$ 946000 − 767786 = 178214

(b) Subtrahend = 536383
$\therefore$ 887245 − 536383 = 350862

(c) Subtrahend = 113877
$\therefore$ 824536 − 113877 = 710659

2. (a) Minuend = 569728
569728 − 276411 = 714000

(b) Minuend = 341454
341454 − 276411 = 65043

(c) Minuend = 767443
767443 − 526005 = 241438

3. (a) 0 (b) 63242 (c) 48916
(d) 61821 (e) 3642 (f) 1

4. 32153 – 1162 = 30991

5. 63148 – 456 = 62692

6. (3211 + 5015) – 5326 = 2900

Learning Target 3.2

1. Arun's flat worth = ₹ 6,36,000
Mohan's flat worth = ₹ – 3,73,000
Difference = ₹ 2,63,000

So, Arun's flat is more costly by Mohan's flat by ₹ 2,63,000.

2. Greater number = 6,14,893
Difference = – 18,489
Smaller number = 5,96,404

3. Mr. Khanna's total bank account = ₹ 48635
Mr. Khanna's withdrawl = ₹ – 33296
Money left in bank account = ₹ 15339

4. Books displayed at a book fair = ₹ 65348
Books in English = – ₹ 23067
Books other than english = ₹ 42281

5. Candidate B got votes = ₹ 885765
Candidate A got less votes than B = – ₹ 2458
Candidate A get votes = ₹ 883307

Learning through puzzle

△ = 12 ○ = 9 □ = 8

Learning Target 3.3

1. Sweta has money = ₹ 25,306
Her father gave money = + ₹ 5,632
Total money she have = ₹ 30,938

Total money she have = ₹ 30,938
She gave to her brother = – ₹ 3,284
Money she have now = ₹ 27,654

2. Number of Men = 1,265
Number of women = + 1,150
Total number of men and women = 2,415

Total people visited = 5,450
Total number of men and women = − 2,415
Total number of children = 3,035

3. Maths books published in 2001 = 32,418
Science books published in 2001 = + 16,258
Total maths and science books published = 48,676

Total books published in 2001 = 82,300
Total maths and science books published = − 48,676
Number of books of other subject published = 33,624

4. Rice sold on tuesday = 45,325
Rice sold more on wednesday = + 845
Total rice sold on wednesday = 46,170

Rice sold on tuesday = 45,325
Rice sold less on thursday = − 823
Total rice sold on thursday = 44,502

Total rice sold on tuesday = 45,325
Total rice sold on wednesday and thursday = 90,672
Total rice sold in three days = 1,35,997

Learning through puzzle

START BOX = 56

Catch The Concept

1. (a) Th H T O
2 1 2 3
(b) Th H T O
4 8 1 2
(c) Th H T O
3 7 5 3

2. (a) Subtrahend (b) 0 (c) Successor
(d) 0 (e) 3 (f) 48321
(g) Greatest 5-digit no. (h) 683246

3. (a)
8,319
2,615
72,320
+ 16,746
1,00,000

(b)
37469
− 5945
31524

Apply Your Mind!

1. $20-19=1$, $1+18=19$, $19-17=2$
$2+16=18$, $18-15=3$, $3+14=17$
$17-13=4$

2. (b) A shopkeeper purchased mangoes = 520
Mangoes spoiled = – 18
He sold mangoes = – 244
Mangoes left = 520 – 18 – 244

3.

Th	H	T	O
	3	2	3 2
–	2	3	2 3
		9	0 9

Hence, 2 < 3 so we take 1 ten then it becomes 12 – 3 = 9
2 = 2 = 0, then 2 < 3 we take 1 hundred
from left it becomes 12 – 3 = 9
then 2 – 2 = 0 so answer is 909.

❑

4. Multiplication

Task-1

1. (a) 4326 × 1 = 4326 (b) 44 × 3 = 132
(c) 5263 × 0 = 0 (d) 265 × 713
(e) 324 × (1176 × 23)

2. (a) 230 (b) 62500 (c) 432
(d) 1000

3. (a) 4800 (b) 600 (c) 24,500
(d) 1,60,200

4. (a) 56,000 (b) 4,29,000 (c) 2,24,000
(d) 3,57,000

Learning through puzzle

2	×	7	=	**14**		3	×	12	=	**36**
×				×		×				
11		5	×	**5**	=	**25**				
=				=		=				
22				70		**75**	×	**2**	=	150

Task-2

1. (a) even (b) 906 (c) even (d) 3580

2. (a)

×	5	8	4
3	15	24	12
4	20	32	16
6	30	48	24

(b)

×	1	0	7
8	8	0	45
4	4	0	28
3	3	0	21

(c)

×	3	9	4
4	12	36	16
7	21	63	28
1	3	9	4

Learning Target 4.1

1. (a)
$$\begin{array}{r} 321 \\ \times 123 \\ \hline 963 \\ 6420 \\ 32100 \\ \hline 39483 \end{array} \quad \begin{array}{l} \\ \\ \rightarrow 3\times 321 \\ \rightarrow 20\times 321 \\ \rightarrow 100\times 321 \\ \\ \end{array}$$

(b)
$$\begin{array}{r} 423 \\ \times 205 \\ \hline 2115 \\ 000 \\ 84600 \\ \hline 86715 \end{array} \quad \begin{array}{l} \\ \\ \rightarrow 5\times 433 \\ \rightarrow 0\times 423 \\ \rightarrow 200\times 423 \\ \\ \end{array}$$

(c)
$$\begin{array}{r} 213 \\ \times 34 \\ \hline 852 \\ 6390 \\ \hline 7242 \end{array} \quad \begin{array}{l} \\ \\ \rightarrow 4\times 213 \\ \rightarrow 30\times 213 \\ \\ \end{array}$$

(d)
$$\begin{array}{r} 6394 \\ \times 25 \\ \hline 31970 \\ 127880 \\ \hline 159850 \end{array} \quad \begin{array}{l} \\ \\ \rightarrow 5\times 6394 \\ \rightarrow 20\times 6394 \\ \\ \end{array}$$

(e)
$$\begin{array}{r} 3001 \\ \times 712 \\ \hline 6002 \\ 30010 \\ 2100700 \\ \hline 2136712 \end{array} \quad \begin{array}{l} \\ \\ \rightarrow 2\times 3001 \\ \rightarrow 10\times 3001 \\ \rightarrow 700\times 3001 \\ \\ \end{array}$$

(f)
$$\begin{array}{r} 6443 \\ \times 503 \\ \hline 19329 \\ 00000 \\ 3221500 \\ \hline 3240829 \end{array} \quad \begin{array}{l} \\ \\ \rightarrow 3\times 6443 \\ \rightarrow 0\times 6443 \\ \rightarrow 500\times 6443 \\ \\ \end{array}$$

2. (a)
$$\begin{array}{r} 217 \\ \times 502 \\ \hline 434 \\ 000 \\ 108500 \\ \hline 108934 \end{array} \quad \begin{array}{l} \\ \\ \rightarrow 2\times 217 \\ \rightarrow 0\times 217 \\ \rightarrow 500\times 217 \\ \\ \end{array}$$

(b)
$$\begin{array}{r} 640 \\ \times 140 \\ \hline 000 \\ 25600 \\ 64000 \\ \hline 89600 \end{array} \quad \begin{array}{l} \\ \\ \rightarrow 0\times 640 \\ \rightarrow 40\times 640 \\ \rightarrow 100\times 640 \\ \\ \end{array}$$

(c)
$$\begin{array}{r} 1335 \\ \times 215 \\ \hline 6675 \\ 13350 \\ 267000 \\ \hline 287025 \end{array} \quad \begin{array}{l} \\ \\ \rightarrow 5\times 1335 \\ \rightarrow 10\times 1335 \\ \rightarrow 200\times 1335 \\ \\ \end{array}$$

3. (a) $5\times 3\times 14 = 18\times 14$

$$\begin{array}{r} 18 \\ \times 14 \\ \hline 72 \\ 180 \\ \hline 252 \end{array} \quad \begin{array}{l} \\ \\ \rightarrow 4\times 18 \\ \rightarrow 10\times 18 \\ \\ \end{array}$$

(b) $269\times 0\times 73$

Any number multiplied by zero is $0 = 0$

(c) $6\times4\times11\times130$
$= 24\times11\times130$
$= 264\times130$

264	
$\times 130$	
000	$\rightarrow 0\times264$
7920	$\rightarrow 30\times264$
26400	$\rightarrow 100\times264$
34320	

(d) $130\times11\times202$
$= 1430\times202$

1430	
$\times 202$	
2860	$\rightarrow 2\times1430$
0000	$\rightarrow 0\times1430$
286000	$\rightarrow 200\times1430$
288860	

4. (a) $2\times18\times50$
$= 36\times50$

50	
$\times 36$	
300	$\rightarrow 6\times50$
1500	$\rightarrow 30\times50$
1800	

(b) $4\times325\times25$
$= 100\times325$

325	
$\times 100$	
000	$\rightarrow 0\times325$
000	$\rightarrow 0\times325$
32500	$\rightarrow 100\times32500$
32500	

(c) $2\times50\times100$
$= 100\times100$

100	
$\times 100$	
000	$\rightarrow 0\times100$
000	$\rightarrow 0\times100$
10000	$\rightarrow 100\times100$
10000	

(d) $8\times114\times25$
$= 200\times114$

200	
$\times 114$	
800	$\rightarrow 4\times200$
2000	$\rightarrow 10\times200$
20000	$\rightarrow 100\times200$
22800	

Just 4 fun

$3\times10+5\times2-6\div4=16$

Learning through puzzle

◯ = 12 or 13

△ = 13 or 12

Learning Target 4.2

1. School fee of each student = ₹ 800
fee of 85 students = $\times 85$
Total fee of 85 students = 68000

2. Cost of each shirt = ₹ 258
Cost of 12 shirts = × 12
Total Money needed to buy 12 shirts = 3096

3. Row of mango trees = 75
Mango in each row = × 25
Total mangoes = 1875

4. Potato plant in each row = 240
Number of rows = × 24
Total number of potato plant = 5760

5. Cost of 1 kg of sweets = ₹ 240
Cost of 15 kg of sweets = × 15
So total cost of 15 kg of sweets = 3600

6. Do it yourself.

Catch The Concept

1. (a) 900 (b) 0 (c) 10,800
(d) 432

2. (a)
$$\begin{array}{r} 613 \\ \times 505 \\ \hline 3065 \\ 0000 \\ 306500 \\ \hline 309565 \end{array} \begin{array}{l} \\ \\ \rightarrow 5\times 613 \\ \rightarrow 0\times 613 \\ \rightarrow 500\times 613 \\ \\ \end{array}$$

(b)
$$\begin{array}{r} 8946 \\ \times 130 \\ \hline 0000 \\ 268380 \\ 894600 \\ \hline 1162980 \end{array} \begin{array}{l} \\ \\ \rightarrow 0\times 8946 \\ \rightarrow 30\times 8946 \\ \rightarrow 100\times 8946 \\ \\ \end{array}$$

(c)
$$\begin{array}{r} 4823 \\ \times 789 \\ \hline 43407 \\ 385840 \\ 3376100 \\ \hline 3805347 \end{array} \begin{array}{l} \\ \rightarrow 9\times 4823 \\ \rightarrow 80\times 4823 \\ \rightarrow 700\times 4823 \\ \\ \end{array}$$

3. (a) 15 (b) 0 (c) 0

4. (a)
$$\begin{array}{r} 425 \\ \times 6 \\ \hline 2550 \end{array} \begin{array}{l} \\ \\ \rightarrow 6\times 425 \end{array}$$

(b)
$$\begin{array}{r} 314 \\ \times 8 \\ \hline 2512 \end{array} \begin{array}{l} \\ \\ \rightarrow 8\times 314 \end{array}$$

(c)
$$\begin{array}{r} 442 \\ \times 31 \\ \hline 442 \\ 13260 \\ \hline 13702 \end{array} \begin{array}{l} \\ \rightarrow 1\times 442 \\ \rightarrow 30\times 442 \\ \\ \end{array}$$

(d)
$$\begin{array}{r} 1304 \\ \times 5 \\ \hline 6520 \end{array} \begin{array}{l} \\ \\ \rightarrow 5\times 1304 \end{array}$$

5. (a) $(4\times4)+7=23$ (b) $(10\times6)+20=80$

(c) $(11\times10)+10=120$ (d) $(2\times13)-6=20$

Apply Your Mind!

1. Navya bought bags of blue ball = 7

Navya bought bags of white ball = 5

Each bag has balls = 9

Total number of balls she bought = $9\times(7+5)$

2.
$$\begin{array}{r} 983 \\ \times\ 36 \\ \hline 5898 \\ 29490 \\ \hline 35388 \end{array}$$
$\rightarrow 6\times983$

$\rightarrow 30\times983$

Rounded off to the nearest 100 = 35,400

3.
$$\begin{array}{r} 333 \\ \times\ 6 \\ \hline 1998 \end{array}$$

❑

5. Division

Task-1

1. (a) Dividend = 35 (b) Dividend = 27

(c) Dividend = 64 (d) Dividend = 108

2. (a) Divisor = 5 (b) Divisor = 9

(c) Divisor = 16 (d) Divisor = 21

3. (a) 56 (b) 0 (c) 1

(d) Dividend (e) Remainder (f) 0

Learning through puzzle

□ = 4

△ = 12

Learning Target 5.1

1. (a)
$$\begin{array}{r} 8\overline{)1089}\ (136 \\ -8 \\ \hline 28 \\ -24 \\ \hline 49 \\ -48 \\ \hline 1 \end{array}$$

Checking

Dividend = Divisor × Quotient + Remainder

$1089 = 8\times136+1$

$1089 = 1088+1$

$1089 = 1089$

Hence, answer is verified.

Remainder = 1, Quotient = 136

(b) 31) 453 (14

-31

143

-124

19

Checking

Dividend = Divisor × Quotient + Remainder

$453 = 31 \times 14 + 19$

$453 = 434 + 19$

$454 = 453$ Hence answer is verified.

Remainder = 19, Quotient = 14

(c) 24) 1000 (41

-96

40

-24

16

Checking

Dividend = Divisor × Quotient + Remainder

$1000 = 24 \times 41 + 16$

$1000 = 984 + 16$

$1000 = 1000$ Hence answer is verified.

Remainder = 16, Quotient = 41

(d) 11) 599 (54

-55

49

-44

5

Checking

Dividend = Divisor × Quotient + Remainder

$599 = 11 \times 54 + 5$

$599 = 594 + 5$

$599 = 599$ Hence answer is verified.

Remainder = 5, Quotient = 54

(e) 17) 319 (18

-17

149

-136

13

Dividend = Divisor × Quotient + Remainder

$319 = 17 \times 18 + 13$

$319 = 306 + 13$

$319 = 319$

Hence answer is verified.

Remainder = 13, Quotient = 18

(f) 48) 768 (16

-48

288

-288

0

Dividend = Divisor × Quotient + Remainder

$768 = 48 \times 16 + 0$

$768 = 768 + 0$

$768 = 768$

Hence answer is verified.

Remainder = 0, Quotient = 16

2. (a) 42) 2363 (56

-210

263

-252

11

Quotient = 56

Remainder = 11

(b) 54) 4580 (84
− 432 — Quotient = 84
260 — Remainder = 44
− 216
44

(c) 51) 1581 (31
− 153 — Quotient = 31
51 — Remainder = 0
− 51
0

(d) 43) 5078 (118
− 43 — Quotient = 118
77 — Remainder = 4
− 43
348
− 344
4

(e) 42) 4562 (108
− 42 — Quotient = 108
362 — Remainder = 26
−336
26

(f) 31) 4446 (143
− 31 — Quotient = 143
134 — Remainder = 13
− 124
106
− 93
13

3. (a) 25) 4138 (165
− 25 — Dividend = Divisor × Quotient + Remainder
163 — 4138 = 25×165+13
− 150 — 4138 = 4125+13
138 — 4138 = 4138
− 125 — Hence verified
13

Quotient = 165, Remainder = 13

(b) 41) 23291 (568

− 205	Dividend = Divisor × Quotient + Remainder
279	23291 = 41 × 568 + 3
− 246	23291 = 23288 + 3
331	23291 = 23291
− 328	Hence verified.
3	

Quotient = 568, Remainder = 3

(c) 87) 56952 (654

− 522	Dividend = Divisor × Quotient + Remainder
475	56952 = 87 × 654 + 54
− 435	56952 = 56898 + 54
402	56952 = 56952
− 348	Hence verified.
54	

Quotient = 654, Remainder = 54

(d) 24) 8848 (368

− 72	Dividend = Divisor × Quotient + Remainder
164	8848 = 24 × 368 + 16
− 144	8848 = 8832 + 16
208	8848 = 8848
− 192	Hence verified
16	

Quotient = 368, Remainder = 16

(e) 36) 24408 (678

− 216	Dividend = Divisor × Quotient + Remainder
280	24408 = 36 × 678 + 0
− 252	24408 = 24408 + 0
288	24408 = 24408
− 288	Hence verified.
0	

Quotient = 678, Remainder = 0

(f) 18) 11783 (654

− 108	Dividend = Divisor × Quotient + Remainder
98	11783 = 18 × 654 + 11
− 90	11783 = 11772 + 11
83	11783 = 11783
− 72	Hence verified.
11	

Quotient = 654, Remainder = 11

Learning through puzzle

6

Learning Target 5.2

1. (a) 572) 3440 (6

− 3432	Quotient = 6
8	Remainder = 8

(b) 245) 3821 (15

− 245	Quotient = 15
1371	Remainder = 146
− 1225	
146	

(c) 192) 8765 (45

− 768	Quotient = 45
1085	Remainder = 125
− 960	
125	

(d) 842) 36814 (43

− 3368	Quotient = 43
3134	Remainder = 608
− 2526	
608	

2. (a) Dividend = Divisor × Quotient + Remainder
= 125 × 120 + 0
= 15000 + 0 = 15000
Hence dividend = 15000

(b) Dividend = Divisor × Quotient + Remainder
= 532 × 228 + 156
= 121296 + 156 = 121452
Hence, dividend = 121452

(c) Dividend = Divisor × Quotient + Remainder
= 261 × 43 + 83
= 11223 + 83
= 11306
Hence, dividend = 11306

Task-2

1. (a) 10) 4300 (430 Answer is 430
− 40
30
− 30
0

(b) 10) 460 (46 Answer is 46
− 40
60
− 60
0

(c) 100) 3200 (32 Answer is 32
− 300
200
− 200
0

(d) 1000) 8000 (8 Answer is 8
− 8000
0

2. (a) 1000) 420000 (420
− 4000 Quotient = 420
2000 Remainder = 0
− 2000
0

(b) 100) 3625 (36
− 300 Quotient = 36
625 Remainder = 25
− 600
25

(c) 100) 130002 (1300
− 100 Quotient = 1300
300 Remainder = 2
− 300
02

Lerning Target 5.3

1. The number to be divided = 16848
We got the answer = 324
The number by which we divide = 324) 16848 (52
So the number is 52.

$$\begin{array}{r} -1620 \\ \hline 648 \\ -648 \\ \hline 0 \end{array}$$

2. Mrs. John withdraw money from bank = ₹ 57,250
She ask money in = ₹ 50 notes
No. of notes = 50) 57250 (1145
So no of ₹ 50 notes she get = 1145

$$\begin{array}{r} -50 \\ \hline 72 \\ -50 \\ \hline 225 \\ -200 \\ \hline 250 \\ -250 \\ \hline 0 \end{array}$$

3. The number by which 56 is multiplied = 56) 36512 (652
to give 36,512
So the number is 652.

$$\begin{array}{r} -336 \\ \hline 291 \\ -280 \\ \hline 112 \\ -112 \\ \hline 0 \end{array}$$

4. A fruit seller bought apples = 92947
No. of apples rotten = -237
Remaining apples 92710
Number of basket = 254
Number of apple in each basket = 254) 92710 (365
∴ Hence answer is 365

$$\begin{array}{r} -762 \\ \hline 1651 \\ -1524 \\ \hline 1270 \\ -1270 \\ \hline 0 \end{array}$$

5. No. of books = 5340
Books in each box = 15
No. of boxes to pack 5340 books = 15) 5340 (356
Hence answer is 356

$$\begin{array}{r} -45 \\ \hline 84 \\ -75 \\ \hline 90 \\ -90 \\ \hline 0 \end{array}$$

Task-3

1. (a) $40+70+20=130$ (b) $40+40+20=100$
(c) $90+30+90=210$

2. (a) $570-340=230$ (b) $170-90=80$
(c) $90-30=60$

Task-4

1. $701+570\div19-15\text{ of }8$ (Simplifying of)
$=701+570\div19-120$ (Simplifying Division)
$=701+30-120$ (Simplifying Addition)
$=731-120$ (Simplifying Subtraction)
$=611$

2. $438\times71-630\div21$ (Simplifying Division)
$=438\times71-30$ (Simplifying Multiplication)
$=31098-30$ (Simplifying Subtraction)
$=31068$

3. $54\div6\times70+110$ (Simplifying Division)
$=9\times70+110$ (Simplifying Multiplication)
$=630+110$ (Simplifying Addition)
$=740$

4. $6000+9000\div500\text{ of }6-2000$ (Simplifying of)
$=6000+9000\div3000-2000$ (Simplifying Division)
$=6000+3-2000$ (Simplifying Addition)
$=6003-2000$ (Simplifying Subtraction)
$=4003$

5. $220+24\times60-1089\div99$ (Simplifying Division)
$=220+24\times60-11$ (Simplifying Multiplication)
$=220+1440-11$ (Simplifying Addition)
$=1660-11$ (Simplifying Subtraction)
$=1649$

6. $432 \div 432 \times 364 - 364$ (Simplifying Division)
$= 1 \times 364 - 364$ (Simplifying Multiplication)
$= 364 - 364$ (Simplifying Subtraction)
$= 0$

Catch The Concept

1. (a) 3745 (b) 5252 (c) 0 (d) 1

2. (a) F (b) F (c) T (d) F

3. (a) 1000) 6003137 (6003
-6000
3137
-3000
137
Hence, quotient = 6003
Remainder = 137

(b) 1000) 78096 (78
-7000
8096
-8000
96
Hence, Quotient = 78
Remainder = 96

(c) 100) 50123 (501
-500
123
-100
23
Hence, quotient = 501
Remainder = 23

(d) 10) 736 (73
-70
36
-30
6
Hence, quotient = 73
Remainder = 6

4. (a) 83) 493265 (5942
-415
782
-747
356
-332
245
-166
79

Checking
Dividend = Divisor × Quotient + Remainder
$493265 = 83 \times 5942 + 79$
$493265 = 493186 + 79$
$493265 = 493265$
Hence, verified

(b) 62) 606060 (9775
-558
480
-434
466
-434
320
-310
10

Checking
Dividend = Divisor × Quotient + Remainder
$606060 = 62 \times 9775 + 10$
$606060 = 606050 + 10$
$606060 = 606060$
Hence, verified

Apply Your Mind!

1.
$$\begin{array}{r} \text{P} \\ \downarrow \\ 62800 \\ 12\overline{)75369} \\ -72 \\ \hline 33 \\ -24 \leftarrow \text{Q} \\ \hline 96 \\ -96 \\ \hline 09 \\ -0 \\ \hline 9 \leftarrow \text{R} \end{array}$$

$$\text{P} + \text{Q} + \text{R} = 8 + 4 + 9$$
$$= 21$$

2. $24 + 24 + 24 + 24 + 24 + 24 = 144$

$24 + 24 = 48$

❑

6. Multiples and Factors

Task-1

1. (a) Next five multiple of 7 = 28, 35, 42, 49, 56
(b) Next five multiple of 8 = 32, 40, 48, 56, 64

2. (a) First four multiples of 6 = 6, 12, 18, 24
(b) First six multiples fo 3 = 3, 6, 9, 12, 15, 18
(c) First five multiples of 8 = 8, 16, 24, 32, 40
(d) First three multiples of 11 = 11, 22, 33

3. (a) Yes $3 \times 4 = 12, 6 \times 2 = 12$
(b) No
(c) Yes $3 \times 12 = 36, 6 \times 6 = 36$

4. (a) Yes $6 \times 6 = 36, 9 \times 4 = 36$
(b) Yes $6 \times 9 = 54, 9 \times 6 = 54$
(c) No

Task-2

1. (a) Factor pair $= 1 \times 5$ $= 1, 5$
(b) Factor pair $= 2 \times 4$ $= 2, 4$
(c) Factor pair $= 3 \times 3$ $= 3, 3$

Learning Target 6.1

1. (a) Y (b) Y (c) N (d) N
(e) N (f) Y

2. 1, 3, 8, 12, 16, 21, 23, 24, 32

3. 16, 32, 64

4. (a) $42 = 2\times21, 3\times14, 6\times7, 7\times6, 14\times3, 21\times2, 42\times1, 1\times42$
So, factors are 2, 3, 6, 7, 14, 21, 42, 1

(b) $24 = 1\times24, 2\times12, 3\times8, 4\times6, 6\times4, 8\times3, 12\times2, 24\times1$
So, factors are 1, 2, 3, 4, 6, 8, 12, 24

(c) $40 = 1\times40, 2\times20, 4\times10, 5\times8, 8\times5, 10\times4, 20\times2, 40\times1$
So, factors are 1, 2, 4, 5, 8, 10, 20, 40

Task-3

1. (a) (2, 44) (4, 11) (2, 2)
(b) (3, 27) (9, 3) (3, 3)
(c) (3, 18) (9, 2) (3, 3)

Learning through puzzle

12, 2, 4, 2, 2

Learning Target 6.2

1. (a) $80 = 2\times2\times2\times2\times5$
(b) $112 = 2\times2\times2\times2\times7$
(c) $256 = 2\times2\times2\times2\times2\times2\times2\times2$

2. (a) 62, 64, 66, 68, 70 (b) 12, 24, 36, 48, 60, 72
(c) 60,72, 84, 96 (d) 61, 67, 71, 73, 79, 83, 89

3. (a) P (b) C (c) P (d) P
(e) C (f) Neither prime nor composite

Just 4 fun

$2\times3\times5\times4 = 120, 8\times5\times3 = 120$

Task-4

1. (a) Y, N, N (b) N, Y, N (c) Y, Y, Y
(d) N, N, N

2. (a) 428 = Sum of digit = $4+2+8 = 14$
Sum is not divisible by 3 and 9
So number is not divisible by 3 and 9.

(b) 477 = Sum of digit = $4+7+7 = 18$
Sum is divisible by 3 and 9
So number is divisible by 3 and 9

(c) 3012 = Sum of digit = 3 + 0 + 1 + 2 = 6
Sum is divisible by 3 not by 9
So number is divisible by 3 not by 9

(d) 1263 = Sum of digit = 1 + 2 + 6 + 3 = 12
Sum is divisible by 3 not by 9
So number is divisible by 3 not by 9

3. (a) 432640 = Sum of last two digit = 4 + 0 = 4
Sum is divisible by 4
So the number is divisible by 4

(b) 204521 = Sum of last two digit = 2 + 1 = 3
Sum is not divisible by 4
So the number is not divisible by 4

(c) 3240688 = Sum of last two digit = 8 + 8 = 16
Sum is divisible by 4
So the number is divisible by 4

(d) 27314 = Sum of last two digit = 1 + 4 = 5
Sum is not divisible by 4
So the number is not divisible by 4
So, the required number divisible by 4
are 432640 and 3240688

4. (a) 32, 34, 36, 38, 40, 42, 44, 46, 48

(b) 33, 36, 39, 42, 45, 48

(c) 40

(d) 40

Task-5

1. 16 **2.** 18 **3.** 9

Learning Target 6.3

1. (a) $5 = \mathbf{5} \times 1$
$15 = 3 \times \mathbf{5}$
H.C.F. = 5

(b) $20 = \mathbf{2} \times 2 \times \mathbf{5}$
$30 = \mathbf{2} \times 3 \times \mathbf{5}$
H.C.F. $= 2 \times 5 = 10$

(c) $16 = \mathbf{2} \times \mathbf{2} \times \mathbf{2} \times \mathbf{2}$
$32 = \mathbf{2} \times \mathbf{2} \times \mathbf{2} \times \mathbf{2} \times 2$
H.C.F. $= 2 \times 2 \times 2 \times 2 = 16$

(d) $23 = 1 \times 23$
$26 = 2 \times 13$
H.C.F. = 1

(e) $4 = \mathbf{2} \times 2$
$10 = \mathbf{2} \times 5$
H.C.F. = 2

2. (a)

3	45
3	15
5	5
	1

5	35
7	7
	1

H.C.F. = 5

(b)

2	40
2	20
2	10
5	5
	1

2	42
3	21
7	7
	1

2	72
2	36
2	18
3	9
3	3
	1

H.C.F. = 2

(c)

2	48
2	24
2	12
2	6
3	3
	1

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

H.C.F. = $2 \times 2 \times 2 \times 2 = 16$

(d)

5	25
5	5
	1

2	40
2	20
2	10
5	5
	1

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

H.C.F. = 1

(e)

2	50
5	25
5	5
	1

3	105
5	35
7	7
	1

H.C.F. = 5

(f)

2	112
2	56
2	28
2	14
7	7
	1

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

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

H.C.F. = $2 \times 2 \times 2 \times 2$
$= 16$

3. (a)

3	30, 45
5	10, 15
	2, 3

2 and 3 cannot divided further as they do not have common factor
So H.C.F. = $3 \times 5 =$ **15**

(b)

3	9, 33
	3, 11

3 and 11 cannot divided further as they do not have common factor
So H.C.F. = **3**

(c)

5	25, 40
	5, 8

5 and 8 cannot divided further as they do not have common factor
So H.C.F. = **5**

(d)

2	64, 80
2	32, 40
2	16, 20
2	8, 10
	4, 5

4 and 5 cannot divided further as they do not have common factor

So H.C.F. = $2 \times 2 \times 2 \times 2 =$ **16**

(e)

3	84, 105
7	28, 35
	4, 5

4 and 5 cannot divide further as they do not have common factor

So H.C.F. = $3 \times 7 =$ **21**

(f)

2	56, 72
2	28, 36
2	14, 18
	7, 9

7 and 9 cannot divided further as they do not have common factor

So H.C.F. = $2 \times 2 \times 2 =$ **8**

4. (a) H.C.F. of 14 and 28 is 14, so they are not co-prime
(b) H.C.F. of 12 and 17 is 1, so they are co-prime
(c) H.C.F. of 18 and 36 is 18, so they are not co-prime
(d) H.C.F. of 25 and 27 is 1, so they are co-prime
(e) H.C.F. of 9 and 13 is 1 , so they are co-prime
(f) H.C.F. of 31 and 32 is 1, so they are co-prime

Learning Target 6.4

1.

2	32, 40, 64
2	16, 20, 32
2	8, 10, 16
	4, 5, 8

4, 5, 8 have no common factor further

So H.C.F. = $2 \times 2 \times 2 = 8$

2.

11	33, 44, 55
	3, 4, 5

3, 4, 5, have no common factor further

So H.C.F. = 11

3. Number leaving 6 as remainder, so the number are $96 - 6 = 90$ and $106 - 6 = 100$

2	90, 100
5	45, 50
	9, 10

9, 10 have no common factor further

So, H.C.F. = $2 \times 5 = 10$

4. Number leaving remainder 2, 3, 4 respectively.
So numbers are $58-2=56$, $36-3=33$, $74-4=70$

56, 33, 70	

56, 33, 70 have no common factor
So H.C.F. = 1

Learning Target 6.5

1. (a)

3	21
7	7
	1

3	63
3	21
7	7
	1

L.C.M. $= 3\times 7\times 3 =$ **63**

(a)

5	25
5	5
	1

2	80
2	40
2	20
2	10
5	5
	1

L.C.M. $= 5\times 5\times 2\times 2\times 2\times 2$
$= 50\times 8 =$ **400**

(c)

2	54
3	27
3	9
3	3
	1

2	60
2	30
3	15
5	5
	1

L.C.M. of 54 and 60
$= 2\times 3\times 3\times 3\times 2\times 5 = 540$

Now L.C.M. of 540 and 90

2	540
2	270
3	135
3	45
3	15
5	5
	1

2	90
5	45
3	9
3	3
	1

L.C.M. $= 2\times 2\times 3\times 3\times 3\times 5$
$=$ **540**

(d)

2	16
2	8
2	4
2	2
	1

2	28
2	14
7	7
	1

L.C.M of 16 and 28
$= 2\times 2\times 2\times 2\times 7$
$= 112$

Now L.C.M. of 112 and 40

2	112
2	56
2	28
2	14
7	7
	1

2	40
2	20
2	10
5	5
	1

L.C.M. $= 2\times 2\times 2\times 2\times 5\times 7$
$=$ **560**

(e)

2	112
2	56
2	28
2	14
7	7
	1

2	168
2	84
2	42
3	21
7	7
	1

L.C.M. of 112 and 168
$= 2\times2\times2\times2\times3\times7 = 336$

Now L.C.M. of 2000 and 750

2	336
2	168
2	84
2	42
3	21
7	7
	1

2	266
7	133
19	19
	1

L.C.M. $= 2\times2\times2\times2\times3\times7\times19$
$=$ **6384**

(f)

2	250
5	125
5	25
5	5
	1

2	400
2	200
2	100
2	50
5	25
5	5
	1

L.C.M. of 250 and 400
$= 2\times2\times2\times2\times5\times5\times5$
$= 2000$

Now L.C.M. of 2000 and 750

2	2000
2	1000
2	500
2	250
5	125
5	25
5	5
	1

2	750
3	375
5	125
5	25
5	5
	1

L.C.M. $= 2\times2\times2\times2\times3\times5\times5\times5$
$=$ **6000**

2. (a)

2	50, 60
2	25, 30
3	25, 15
5	25, 5
5	5, 1
	1, 1

L.C.M. $= 2\times2\times3\times5\times5$
$= 300$

(b)

2	36, 42, 148
2	18, 21, 74
3	9, 21, 37
	3, 7, 37

L.C.M. $= 2\times2\times3\times3\times7\times37$
$= 9324$

(c)

2	75, 120
2	75, 60
2	75, 30
3	75, 15
5	25, 5
5	5, 1
	1, 1

L.C.M. = $2\times2\times2\times3\times5\times5$
= 600

(d)

2	16, 18
	8, 9

L.C.M. = $2\times8\times9$
= 144

(e)

2	10, 16, 18
	5, 8, 9

L.C.M. = $2\times5\times8\times9$ = 720

(f)

2	36, 42
2	18, 21
3	9, 21
	3, 7

L.C.M. = $2\times2\times3\times3\times7$ = 252

Task-6

1. L.C.M.

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

L.C.M. = $2\times2\times2\times2\times3$
= 48

H.C.F.

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

No, further common factor of 2 and 3
H.C.F. = $2\times2\times2$ = 8

2. L.C.M.

2	36, 45
2	18, 45
3	9, 45
3	3, 15
5	1, 5
	1, 1

L.C.M. = $2\times2\times3\times3\times5$ = 180

H.C.F.

2	36
2	18
3	9
3	3
	1

3	45
3	15
5	5
	1

H.C.F. = 3×3 = 9

3. L.C.M.

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

H.C.F.

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

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

L.C.M. $= 2\times2\times2\times2\times2\times2\times3$
$= 192$

H.C.F. $= 2\times2\times2\times2\times2$
$= 32$

Catch The Concept

1. (a) 6, 12, 18, 24 (b) 8, 16, 24, 32
(c) 10, 20,30, 40 (d) 15, 30, 45, 60

2. (a) $1\times8, 2\times4, 4\times2, 8\times1$
Factors are 1, 2, 4, 8
(b) $1\times12, 2\times6, 3\times4, 4\times3, 6\times2, 12\times1$
Factors are 1, 2, 3, 4, 6, 12
(c) $1\times18, 2\times9, 3\times6, 6\times3, 9\times2, 18\times1$
Factors are 1, 2, 3, 6, 9, 18
(d) $1\times36, 2\times18, 3\times12, 4\times9, 9\times4, 12\times3, 18\times2, 36\times1$
Factors are 1, 2, 3, 4, 9, 12, 18, 36

3.

(a)	1, 2, 3, 4, 6, 12	1, 2, 4, 8, 16	1, 2, 4
(b)	1, 2, 5, 10	1, 2, 3, 5, 6, 10, 15, 30	1, 2, 5, 10
(c)	1, 2, 3, 4, 6, 8, 12, 24	1, 2, 3, 4, 6, 9, 12, 18, 36	1, 2, 3, 4, 6, 12
(d)	1, 2, 7, 14	1, 3, 9, 27	1

4. (a) $2\times2\times2\times2\times2$
(b) $2\times2\times2\times2\times2\times2$
(c) $2\times2\times2\times2\times7$

5. H.C.F.

5	25
5	5
	1

2	40
2	20
2	10
5	5
	1

3	75
5	25
5	5
	1

H.C.F. = 5

L.C.M.

5	25
5	5
	1

2	40
2	20
2	10
5	5
	1

3	75
5	25
5	5
	1

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

Apply Your Mind!

1. Factor of 6 = 1, 2, 3, 6
   Factor of 20 = 1, 2, 4, 5, 10, 20
   Common factors = 1, 2
2. Fourth multiple of $7 = 7\times 4 = 28$
   Product of $3\times 28 = 84$
3. 3 and 4

❑

7. Fractions

Task-1

1. (a) $\frac{3}{5}\times\frac{2}{2}=\frac{6}{10}$, $\frac{3}{5}\times\frac{3}{3}=\frac{9}{15}$, $\frac{3}{5}\times\frac{4}{4}=\frac{12}{20}$

   (b) $\frac{1}{2}\times\frac{2}{2}=\frac{2}{4}$, $\frac{1}{2}\times\frac{3}{3}=\frac{3}{6}$, $\frac{1}{2}\times\frac{4}{4}=\frac{4}{8}$

2. (a) $\frac{6}{18}=\frac{5}{15}=\frac{4}{12}$ (b) $\frac{4}{10}=\frac{8}{20}=\frac{16}{40}$

Learning Target 7.1

1. Proper fraction has numerator less than denominator
   So, proper fractions are $\frac{1}{4},\frac{4}{6},\frac{5}{6},\frac{15}{18}$
2. Improper fraction has numerator more than denominator
   So improper fraction are $\frac{7}{5},\frac{19}{17},\frac{14}{3}$
3. Unit fraction has 1 as numerator
   Units fractions are $\frac{1}{10},\frac{1}{5},\frac{1}{4},\frac{1}{100},\frac{1}{6}$

4. Mixed fraction has a whole number and a proper fraction is called mixed fraction.

So mixed fraction are $2\frac{3}{5}, 4\frac{3}{8}, 4\frac{7}{8}$

5. Divide numerator by denominator. Write the quotient as whole number, remainder as the numerator and the divisor as the denominator

So answer is (a) $3\frac{4}{7}$ (b) $6\frac{1}{6}$ (c) $7\frac{4}{9}$ (d) $10\frac{2}{4}$

6. Multiply whole number by denominator. Add the numerator to the product and write as numerator. Also write the denominator. So answer is

(a) $\frac{45}{6}$ (b) $\frac{89}{8}$ (c) $\frac{101}{12}$ (d) $\frac{49}{4}$

7. (a) L.C.M. of 8 and 16 = 16

$\frac{6\times 2}{8\times 2}, \frac{3}{16} = \frac{12}{16}, \frac{3}{16}$

(b) L.C.M. of 20 and 40 = 40

$\frac{8\times 2}{20\times 2}, \frac{6}{40} = \frac{16}{40}, \frac{6}{40}$

(c) First change mixed fraction into improper fraction $\frac{7}{2}, \frac{6}{40}$

L.C.M. of 2 and 40 = 40

$\frac{7\times 20}{2\times 20}, \frac{6}{40} = \frac{140}{40}, \frac{6}{40}$

(d) Change mixed fraction into improper fraction $\frac{17}{3}, \frac{57}{12}$

L.C.M. of 3 and 12 = 12

$\frac{17\times 4}{3\times 4}, \frac{57}{12} = \frac{68}{12}, \frac{57}{12}$

Task-2

1. (a) L.C.M. of 8 and 2 is 8, so $\frac{2}{8}, \frac{1\times 4}{2\times 4}$

So $\frac{2}{8} < \frac{4}{8}$. Hence $\frac{2}{8} < \frac{1}{2}$

(b) L.C.M. of 4 and 3 is 12, so $\frac{1\times 4}{3\times 4}, \frac{1\times 3}{4\times 3}$

$\frac{4}{12} > \frac{3}{12}$. Hence $\frac{1}{3} > \frac{1}{4}$

(c) L.C.M. of 6 and 4 is 12, so $\frac{3\times 2}{6\times 2}, \frac{2\times 3}{4\times 3}$

$\frac{6}{12} = \frac{6}{12}$. Hence $\frac{3}{6} = \frac{2}{4}$

(d) L.C.M of 8 and 3 is 24, so $\frac{6\times3}{8\times3}, \frac{2\times8}{3\times8}$

$\frac{18}{24} > \frac{16}{24}$. Hence $\frac{6}{8} > \frac{2}{3}$

2. (a) L.C.M. of 3 and 2 is 6, so $\frac{2\times2}{3\times2}, \frac{1\times3}{2\times3}$

$\frac{4}{6} > \frac{3}{6}$. Hence $\frac{2}{3} > \frac{1}{2}$

(b) L.C.M. of 3 and 4 is 16, so $\frac{2\times4}{3\times4}, \frac{1\times3}{4\times3}$

$\frac{8}{12} > \frac{3}{12}$. Hence $\frac{2}{3} > \frac{1}{4}$

(c) L.C.M. of 12 and 13 is 156. So $\frac{7\times13}{12\times13}, \frac{6\times12}{13\times12}$

$\frac{91}{156} > \frac{72}{156}$. Hence $\frac{7}{12} > \frac{6}{13}$

3. (a) First change into improper fraction i.e. $\frac{8}{3}, \frac{25}{8}$

L.C.M. of 8 and 3 is 24. So $\frac{8\times8}{3\times8}, \frac{25\times3}{8\times3}$

$\frac{64}{24} < \frac{75}{24}$. Hence $2\frac{2}{3} < 3\frac{1}{8}$

(b) First change into improper fraction i.e. $\frac{14}{3}, \frac{17}{4}$

L.C.M. of 3 and 4 is 12. So $\frac{14\times4}{3\times4}, \frac{17\times3}{4\times3}$

$\frac{56}{12} > \frac{51}{12}$. Hence $4\frac{2}{3} > 4\frac{1}{4}$

(c) First change into improper fraction i.e. $\frac{43}{7}, \frac{49}{8}$

L.C.M. of 7 and 8 is 56. So $\frac{43\times8}{7\times8}, \frac{49\times7}{8\times7}$

$\frac{344}{8} > \frac{343}{8}$. Hence $6\frac{1}{7} > 6\frac{1}{8}$

4. (a) L.C.M. of 4, 6, 10, 2 is 60

$\frac{1\times15}{4\times15}, \frac{9\times10}{6\times10}, \frac{7\times6}{10\times6}, \frac{1\times30}{2\times30} = \frac{15}{60}, \frac{90}{60}, \frac{42}{60}, \frac{30}{60}$

$\frac{15}{60} < \frac{30}{60} < \frac{42}{60} < \frac{90}{60}$. Hence $\frac{1}{4} < \frac{1}{2} < \frac{7}{10} < \frac{9}{6}$

(b) Numerators are same, so the fraction having smaller denominator have highest value and so on.

Hence Ascending order $= \frac{4}{18} < \frac{4}{12} < \frac{4}{6} < \frac{4}{3}$.

(c) L.C.M. of 3, 9, 12 and 2 = 36

$\frac{1\times12}{3\times12}, \frac{4\times4}{9\times4}, \frac{5\times3}{12\times3}, \frac{1\times18}{2\times18} = \frac{12}{36}, \frac{16}{36}, \frac{15}{36}, \frac{18}{36}$

$\frac{12}{36} < \frac{15}{36} < \frac{16}{36} < \frac{18}{36}$. Hence $\frac{1}{3} < \frac{5}{12} < \frac{4}{9} < \frac{1}{2}$

(d) L.C.M. of 5, 15, 10 and 20 = 60

$\frac{1\times12}{5\times12}, \frac{4\times4}{15\times4}, \frac{5\times6}{10\times6}, \frac{7\times3}{20\times3} = \frac{12}{60}, \frac{16}{60}, \frac{30}{60}, \frac{21}{60}$

$\frac{12}{60} < \frac{16}{60} < \frac{21}{60} < \frac{30}{60}$. Hence $\frac{1}{5} < \frac{4}{15} < \frac{7}{20} < \frac{5}{10}$

5. (a) L.C.M. of 20, 15, 10, 40 = 120

$\frac{7\times6}{20\times6}, \frac{4\times8}{15\times8}, \frac{6\times12}{10\times12}, \frac{9\times3}{40\times3} = \frac{42}{120}, \frac{32}{120}, \frac{72}{120}, \frac{27}{120}$

$\frac{72}{120} > \frac{42}{120} > \frac{32}{120} > \frac{27}{120}$. Hence $\frac{6}{10} > \frac{7}{20} > \frac{4}{15} > \frac{9}{40}$

(b) L.C.M. of 9, 3, 6, 12 = 36

$\frac{5\times4}{9\times4}, \frac{2\times12}{3\times12}, \frac{2\times6}{6\times6}, \frac{7\times3}{12\times3} = \frac{20}{36}, \frac{24}{36}, \frac{12}{36}, \frac{21}{36}$

$\frac{24}{36} > \frac{21}{36} > \frac{20}{36} > \frac{12}{36}$. Hence $\frac{2}{3} > \frac{7}{12} > \frac{5}{9} > \frac{2}{6}$

(c) L.C.M. of 3, 5, 2, 4 = 60

$\frac{2\times20}{3\times20}, \frac{4\times12}{5\times12}, \frac{1\times30}{2\times30}, \frac{3\times15}{4\times15} = \frac{40}{60}, \frac{48}{60}, \frac{30}{60}, \frac{46}{60}$

$\frac{48}{60} > \frac{45}{60} > \frac{40}{60} > \frac{30}{60}$. Hence $\frac{4}{5} > \frac{3}{4} > \frac{2}{3} > \frac{1}{2}$

(d) L.C.M. of 7, 14, 28, 21 = 84

$\frac{2\times12}{7\times12}, \frac{3\times6}{14\times6}, \frac{7\times3}{28\times3}, \frac{5\times4}{21\times4} = \frac{24}{84}, \frac{18}{84}, \frac{21}{84}, \frac{20}{84}$

$\frac{24}{84} > \frac{21}{84} > \frac{20}{84} > \frac{18}{84}$. Hence $\frac{2}{7} > \frac{7}{28} > \frac{5}{21} > \frac{3}{14}$

6. Fractions $\frac{1}{4}, \frac{1}{8}$ and $\frac{9}{13}$ are in lowest form because numerator and denominator have no common factor other than 1.

7. (a) $\frac{10}{30}$ Divide numerator and Denominator by their H.C.F.

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

(b) $\frac{55}{60}$ Divide numerator and denominator by their H.C.F.

$$\frac{55 \div 5}{60 \div 5} = \frac{11}{12}$$

(c) $\frac{15}{20}$ Divide numerator and denominator by their H.C.F.

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

(d) $\frac{20}{80}$ Divide numerator and denominator by their H.C.F.

$$\frac{20 \div 20}{80 \div 20} = \frac{1}{4}$$

Learning through puzzle

Total shaded portion = 8
Total unshaded portion = 2
Fraction of figure unshaded = $\frac{2}{8} = \frac{1}{4}$ = one-fourth

Learning Target 7.2

1. (a) $\frac{3+5}{6} = \frac{8 \div 2}{6 \div 2} = \frac{4}{3} = \mathbf{1\frac{1}{3}}$ (b) $\frac{3+5}{8} = \frac{8}{8} = \mathbf{1}$

(c) L.C.M. of 8 and 16 = 16

$$\frac{3 \times 2}{8 \times 2} + \frac{5 \times 1}{16 \times 1} = \frac{6}{16} + \frac{5}{16} = \mathbf{\frac{11}{16}}$$

(d) L.C.M. of 4 and 8 = 8

$$\frac{3 \times 2}{4 \times 2} + \frac{5}{8} = \frac{6+5}{8} = \frac{11}{8} = \mathbf{1\frac{3}{8}}$$

(e) Change into impropr fraction $\frac{13}{6} + \frac{4}{3}$

L.C.M. of 6 and 3 = 6

$$\frac{13}{6}+\frac{4\times2}{3\times2}=\frac{13}{6}+\frac{8}{6}=\frac{13+8}{6}=\frac{21}{6}=\frac{7}{2}=\mathbf{3\frac{1}{2}}$$

(f) Change into improper fraction $\frac{41}{8}+\frac{81}{16}$

L.C.M. of 8 and 16 = 16

$$\frac{41\times2}{8\times2}+\frac{81\times1}{16\times1}=\frac{82}{16}+\frac{81}{16}=\frac{163}{16}=\mathbf{10\frac{3}{16}}$$

2. (a) $\frac{11+8+2}{25}=\mathbf{\frac{21}{25}}$ (b) $\frac{1+3+7}{10}=\frac{11}{10}=\mathbf{1\frac{1}{10}}$

(c) First change into improper fraction

$\frac{15}{4}+\frac{9}{2}+\frac{9}{4}$

L.C.M. of 4, 2 and 4 = 4

$$\frac{15\times1}{4\times1}+\frac{9\times2}{2\times2}+\frac{9\times1}{4\times1}=\frac{15}{4}+\frac{18}{4}+\frac{9}{4}=\frac{15+18+9}{4}$$

$$=\frac{42}{4}=\frac{42\div2}{4\div2}=\frac{21}{2}=\mathbf{10\frac{1}{2}}$$

(d) L.C.M. of 4 , 6 and 12 = 12

$$\frac{3\times3}{4\times3}+\frac{5\times2}{6\times2}+\frac{1\times1}{12\times1}=\frac{9}{12}+\frac{10}{12}+\frac{11}{12}=\frac{20}{12}=\frac{5}{3}=\mathbf{1\frac{2}{3}}$$

Just 4 fun

$\frac{x}{20}+\frac{x}{20}+\frac{x}{20}+\frac{x}{20}=\frac{1}{5}$. So x should be **1**.

Learning Target 7.3

1. (a) $\frac{4-2}{7}=\frac{2}{7}$ (b) $\frac{9-5}{12}=\frac{4}{12}$ (c) $\frac{47-23}{75}=\frac{24}{75}$

2. (a) L.C.M. of 1 and 8 = 8

$$\frac{3\times8}{1\times8}-\frac{6\times1}{8\times1}=\frac{24}{8}-\frac{6}{8}=\frac{18\div2}{8\div2}=\frac{9}{4}=\mathbf{2\frac{1}{4}}$$

(b) L.C.M. of 1 and 6 = 6

$$\frac{5\times6}{1\times6}-\frac{4\times1}{6\times1}=\frac{30}{6}-\frac{4}{6}=\frac{26}{6}=\frac{26\div2}{6\div2}=\frac{13}{3}=\mathbf{4\frac{1}{3}}$$

(c) L.C.M. of 1 and 3 = 3

$$\frac{7\times3}{1\times3}-\frac{2\times1}{3\times1}=\frac{21}{3}-\frac{2}{3}=\frac{19}{3}=\mathbf{6\frac{1}{3}}$$

3. (a) First change into improper fraction $\frac{11}{4}-\frac{1}{2}$

L.C.M. of 4 and 2 = 4

$$\frac{11}{4}-\frac{1\times 2}{2\times 2}=\frac{11}{4}-\frac{2}{4}=\frac{9}{4}=\mathbf{2\frac{1}{4}}$$

(b) First change into improper fraction $\frac{7}{2}-\frac{14}{5}$

L.C.M. of 2 and 5 = 10

$$\frac{7\times 5}{2\times 5}-\frac{14\times 2}{5\times 2}=\frac{35}{10}-\frac{28}{10}=\mathbf{\frac{7}{10}}$$

(c) First change into improper fraction $\frac{29}{4}-\frac{1}{2}$

L.C.M. of 4 and 2 = 4

$$\frac{29\times 1}{4\times 1}-\frac{1\times 2}{2\times 2}=\frac{29}{4}-\frac{2}{4}=\frac{27}{4}=\mathbf{6\frac{3}{4}}$$

4. (a) $\frac{3}{5}$ (b) $4\frac{5}{9}$ (c) $\frac{11}{5}$

(d) 0 (e) 0 (f) $\frac{13}{6}$

Learning Target 7.4

1. (a) $\frac{5+1-3}{7}=\frac{3}{7}$ (b) $\frac{9-5-3}{11}=\frac{1}{11}$

(c) $\frac{9+5+1-10}{13}=\frac{5}{13}$ (d) $\frac{5+2-3}{16}=\frac{4}{16}$

2. (a) L.C.M. of 8, 4 and 2 = 8

$$\frac{5\times 1}{8\times 1}-\frac{1\times 2}{4\times 2}+\frac{3\times 4}{2\times 4}=\frac{5}{8}-\frac{2}{8}+\frac{12}{8}=\frac{5-2+12}{8}=\frac{15}{8}=\mathbf{1\frac{7}{8}}$$

(b) L.C.M. of 4, 8 and 6 = 24

$$\frac{7\times 3}{8\times 3}-\frac{1\times 6}{4\times 6}+\frac{3\times 4}{6\times 4}=\frac{21}{24}-\frac{6}{24}+\frac{12}{24}=\frac{21-6+12}{24}$$

$$=\frac{27}{24}=\frac{9}{8}=\mathbf{1\frac{1}{8}}$$

(c) Change into improper fraction $\frac{29}{12}+\frac{37}{8}-\frac{5}{2}$

L.C.M. of 12, 8 and 2 = 24

$$\frac{29\times2}{12\times2}+\frac{37\times3}{8\times3}-\frac{5\times12}{2\times24}=\frac{58}{24}+\frac{111}{24}-\frac{60}{24}$$

$$=\frac{58+111-60}{24}=\frac{109}{24}=\mathbf{4\frac{13}{24}}$$

(d) Change into improper fraction $\frac{33}{7}-\frac{19}{21}-\frac{7}{3}$

L.C.M. of 7, 21 and 3 = 21

$$\frac{33\times3}{7\times3}-\frac{19\times1}{21\times1}-\frac{7\times7}{3\times7}=\frac{99}{21}-\frac{19}{21}-\frac{49}{21}=\frac{31}{21}=\mathbf{1\frac{10}{21}}$$

3. (a) First change into improper fractions $12-\frac{34}{10}+\frac{16}{5}$

L.C.M. of 1, 10 and 5 = 10

$$\frac{12\times10}{1\times10}-\frac{34\times1}{10\times1}+\frac{16\times2}{5\times2}=\frac{120}{10}-\frac{34}{10}+\frac{32}{10}=\frac{120-66}{10}$$

$$=\frac{54}{10}=\frac{54\div2}{10\div2}=\frac{27}{5}=\mathbf{5\frac{2}{5}}$$

(b) Change into improper fraction

$\frac{7}{12}-\frac{5}{24}$ from $\frac{100}{12}$

L.C.M. of 12 and 24 = 24

$$\frac{7\times2}{12\times2}-\frac{5\times1}{24\times1}=\frac{14-5}{24}=\frac{9}{24}$$

Now L.C.M. of 24 and 12 = 24

So $\frac{100\times2}{12\times2}-\frac{9\times1}{24\times1}=\frac{200}{24}-\frac{9}{24}=\frac{191}{24}=\mathbf{7\frac{23}{24}}$

Learning through puzzle

Do yourself.

Learning Target 7.5

1. Gopal read story book on saturday $= \frac{3}{7}$

Gopal read story book on Sunday $= \frac{4}{7}$

Total book read $= \frac{3}{7}+\frac{4}{7}=\frac{7}{7}=1$

So, Gopal read the entire book in 2 days.

2. Navya baked pizzas $= 4$

She gave pizza to her friend $= 2\frac{1}{4} = \frac{9}{4}$

She shared pizza to her brother $= \frac{2}{4}$

Navya left pizza $= 4 - \frac{9}{4} - \frac{2}{4}$

So, L.C.M. of 1, 4 and 4 $= 4$

So, total pizza left $= \frac{4\times4}{1\times4} - \frac{9\times1}{4\times1} - \frac{2\times1}{4\times1}$

$= \frac{16}{4} - \frac{9}{4} + \frac{2}{4} = \frac{5}{4} = \mathbf{1\frac{1}{4}}$

3. Sohni bought Oranges $= 2\frac{1}{2} = \frac{5}{2}$

Sohni bought apples $= 2\frac{2}{3} = \frac{8}{3}$

Sohni bought grapes $= 3\frac{4}{4} = \frac{16}{4}$

Total fruits bought $= \frac{5}{2} + \frac{8}{3} + \frac{16}{4}$

L.C.M. of 2, 3 and 4 = 12 $= \frac{5\times6}{2\times6} + \frac{8\times4}{3\times4} + \frac{16\times3}{4\times3}$

$= \frac{30}{12} + \frac{32}{12} + \frac{48}{12} = \frac{110}{12}$

$= \frac{110\div2}{12\div2} = \frac{55}{6} = \mathbf{9\frac{1}{6}}$

4. Mrs. John bought milk $= 6\frac{1}{2}\text{ L} = \frac{13}{2}\text{ L}$

Mrs. Khan bought milk $= 4\frac{4}{5}\text{ L} = \frac{24}{5}\text{ L}$

Difference $= \frac{13}{2} - \frac{24}{5}$

L.C.M. of 2 and 5 is 10 $= \frac{13\times5}{2\times5} - \frac{24\times2}{5\times2} = \frac{65}{10} - \frac{48}{10}$

Mrs. John bought more milk $= \frac{17}{10} = \mathbf{1\frac{7}{10}}$

5. Kesav had rice in his shop $= 100\text{ kg}$

He sold rice $= 73\frac{4}{5}\text{ kg} = \frac{369}{5}\text{ kg}$

Rice left with Kesav $= 100 - \frac{369}{5}$

L.C.M. of 1 and 5 is 5 $= \frac{100 \times 5}{1 \times 5} - \frac{369 \times 1}{5 \times 1}$

$= \frac{500}{5} - \frac{369}{5} = \frac{131}{5} = \mathbf{26\frac{1}{5}\ kg}$

6. Hardik total salary $= 1$

Hardik spends on rent $= \frac{1}{5}$

Hardik spends on food $= \frac{1}{3}$

Hardik spend on clothes $= \frac{1}{4}$

Fraction of salary he save $= 1 - \left(\frac{1}{5} + \frac{1}{3} + \frac{1}{4}\right)$

L.C.M. of 1, 5, 3 and 4 is 60 $= 1 - \left(\frac{12 + 20 + 15}{60}\right)$

$= 1 - \left(\frac{47}{60}\right) = \frac{60 - 47}{60} = \mathbf{\frac{13}{60}}$

7. Do yourself.

Catch The Concept

1. Proper 2. Improper

3. (a) Improper (b) Proper

4. Mixed fractional

5. (a) $\frac{18}{7} = 2\frac{4}{7}$ (b) $\frac{25}{12} = 2\frac{1}{12}$ (c) $\frac{97}{13} = 7\frac{6}{13}$

6. (a) $3\frac{1}{2} = \frac{7}{2}$ (b) $6\frac{1}{2} = \frac{13}{2}$ (c) $7\frac{1}{8} = \frac{57}{8}$

7. (a) Multiply numerator and denominator by $2 = \frac{4}{10}$

(b) Multiply numerator and denominator by $2 = \frac{14}{24}$

(c) Multiply numerator and denominator by $2 = \frac{18}{26}$

8. (a) 12 is the H.C.F. of given fraction. So divided numerator and denominator by 12 = **2**

(b) 8 is the H.C.F. of given fraction. So divide numerator and denominator by $8 = \frac{1}{4}$

(c) 24 is the H.C.F. of given fraction. So divide numerator and denominator by $24 = \frac{1}{4}$

9. (a) $\frac{5+3}{11} = \frac{8}{11}$

(b) First change into improper fraction

$\frac{19}{5} + \frac{31}{10}$ L.C.M. of 5 and 10 is 10

$= \frac{19\times 2}{5\times 2} + \frac{31\times 1}{10\times 1} = \frac{38}{10} + \frac{31}{10} = \frac{69}{10} = \mathbf{6\,\frac{9}{10}}$

10. (a) First change into improper fraction

$\frac{19}{9} - \frac{11}{9} = \frac{19-11}{9} = \mathbf{\frac{8}{9}}$

(b) First change into improper fraction

$\frac{19}{5} - \frac{31}{10}$ L.C.M. of 5 and 10 = 10

$= \frac{19\times 2}{5\times 2} - \frac{31\times 1}{10\times 1} = \frac{38}{10} - \frac{31}{10} = \frac{7}{10}$

11. (a) First change into improper fraction

$\frac{7}{2} + \frac{10}{7} - \frac{4}{3}$ L.C.M. of 2, 7 and 3 = 42

$= \frac{7\times 21}{2\times 21} + \frac{10\times 6}{7\times 6} - \frac{4\times 14}{3\times 14} = \frac{147}{42} + \frac{60}{42} - \frac{56}{42} = \frac{147+60-56}{42}$

$= \frac{151}{42} = \mathbf{3\,\frac{25}{42}}$

Apply Your Mind!

1. $\frac{2}{5} + \frac{2}{5} + \frac{2}{5} + \frac{2}{5} + \frac{2}{5} = \frac{10}{5} = 2$

Hence 5 two fifths make 2 wholes. Answer is **5**

2. $X = \frac{6}{17} + \frac{8}{17} = \frac{14}{17}$

3. $\frac{1}{3}+\frac{1}{9}$ L.C.M. of 3 and 9 = 9

$\frac{1\times3}{3\times3}+\frac{1\times1}{9\times1}=\frac{3}{9}+\frac{1}{9}=\frac{4}{9}$ Answer is figur **(b)**

❑

8. Decimals

Task-1

1. (a) Fraction = $\frac{7}{100}$ Decimal fraction = 0.07

(b) Fraction = $\frac{14}{100}$ Decimal fraction = 0.14

(c) Fraction = $\frac{3}{1000}$ Decimal fraction = 0.003

2. (b) Decimal number = 1.5 Fraction = $\frac{15}{10}=1\frac{5}{10}$

(c) Fraction = $3\frac{6}{10}$

(d) Decimal number = 1.7 Fraction = $\frac{17}{10}=1\frac{7}{10}$

3. (b) .54, $\frac{54}{100}$, fifty four hundredths

(c) .67, $\frac{67}{100}$, sixty seven hundredths

Learning Target 8.1

1. Do yourself.

2. (b) Word form = Two hundred three and three hundred fifty six thousandths

$$\text{Expanded form} = 200+3+\frac{3}{10}+\frac{5}{100}+\frac{6}{1000}$$
$$= 200+3+0.3+0.05+0.006$$

(c) Standard form = 4030.03

Word form = Four thousand thirty and three hundredths

3. (a) 0.03 (b) 26.1 (c) 0.807

(d) First change into improper fraction = $\frac{100\times3+2}{100}=3.02$

(e) First change into improper fraction $= \frac{1000\times105+105}{1000} = 105.105$

4. (a) $\frac{80}{100}$ (b) $\frac{131}{10}$ (c) $\frac{82}{1000}$

(d) $\frac{405}{100}$ (e) $\frac{3245}{1000}$

Task-2

1. (a) False (b) True (c) False (d) False
(e) True (f) True

2. (a) < (b) > (c) < (d) >
(e) < (f) <

3. (a) 0.451 <0.54 < 0.546 < 0.645
(b) 1.105 < 1.501 < 1.505 < 5051.34
(c) 0.305 < 0.317 < 3.05 < 5.031

4. (a) 0.533 > 0.532 > 0.32 > 0.31 > 0.23
(b) 0.651 > 0.65 > 0.435 > 0.178 > 0.139
(c) 2.506 > 1.76 > 1.532 > 1.35 > 0.35

Task-3

1. (a) 3.7 (b) 1.2 (c) 1.3 (d) 5.0
(e) 0.59 (f) 1.22 (g) 6.08 (h) 23.41

2. (a) 461.54 (b) 376.594 (c) 4.804 (d) 463.864
(e) 61.605 (f) 637.974

3. (a) 3071.874 (b) 185.953 (c) 249.805 (d) 294.1483

Task-4

1. (a) 0.2 (b) 0.59 (c) 4.11 (d) 0.64
(e) 48.42 (f) 5.482 (g) 4.8524 (h) 3.667
(i) 42.546

2. (a) 45.86 (b) 205.194 (c) 3642.498

Learning through puzzle

8.5	+	**4.5**	=	13
–		–		–
4.5	+	3	=	**7.5**
=		=		=
4	+	**1.5**	=	5.5

Learning Target 8.2

1. (a) True (b) False (c) True (d) True

2. (a) 42.402 L (b) ₹ 38.06 (c) 13.07 m (d) 50.008 km
(e) 46.360 kg (f) 4.18 m

Catch The Concept

1. Twenty five and thirty six hundredths

2. $\frac{2536}{100}$ **3.** $20+5+\frac{3}{10}+\frac{6}{100}$

4. $6.54 + 25.36 = 31.90$ **5.** $25.36 - 23.26 = 2.1$

6. 25.37, 25.38 **7.** 24.35, 24.32

Apply Your Mind!

1. 0.00018 **2.** 0.8, 0.85 **3.** 0.66

❑

9. Money

Task-1

1. Do yourself.

2. Do yourself.

Learning Target 9.1

1.

Item	Unit Cost	Number of Items	Total Cost
Pizzas	45	10	450
Almonds	₹ 150	3	450
Juice bottles	₹ 20	2	40

Total bill amount = 940

2.

Item	Unit Cost	Number of Items	Total Cost
Almonds	₹ 150	15	2250
Pizzas	₹ 45	6	270
Juice bottles	₹ 20	7	140

Total bill amount = ₹ 2660

3.

Item	Unit Cost	Number of Items	Total Cost
Juice bottles	20	2	40
Samosas	25	4	100
Almonds	150	1	150

Total bill amount = 290

Learning Target 9.2

1. Total money receive by Suresh = ₹ 200
Now, cost of a book = ₹ 96
and cost of the board game = + ₹ 57
Spent total money = ₹ 153

The total money left = ₹ 200
= − ₹ 153
= ₹ 47

2. Children of class V B = 30
Paid by each child = × ₹ 25
Total money collected = ₹ 750

3. Cost of 10 tennis ball = ₹ 160
Cost of 1 tennis ball = ÷ 10
= ₹ 16

4. Cost of pen = ₹ 5
Cost of dozen pen = × ₹ 12
= ₹ 60

Catch The Concept

1. ₹ 46.50
+ 1.50
₹ 48.00

2. ₹ 9.50
− .35
₹ 9.15

3. ₹ 3.60
× 7
₹ 25.20

4. 8) 18.40 (2.30
− 16
24
− 24
0 0

Answer is ₹ 2.30

(5) Naveena bought balls = 5
Each costing = × ₹ 45
Total money spend = ₹ 225

Apply Your Mind!

1. Total money paid by Mrs. Sharma = ₹ 1800
She bought saree = ₹ 500
She bought towel = ₹ 150
She bought frock = + ₹ 250
Spent total money = ₹ 900

The total money left = ₹ 1800
– ₹ 900
₹ 900

2. Cost of 1 kg of sugar = ₹ 90
1 kg = 1000 gm
Hence, cost of 600 gm of sugar $= \frac{90}{1000} \times 600$
= ₹ 54

3. (a)

❑

10. Measurement

Learning Target 10.1

1. (a) Smallest unit of weight = mg
Largest unit of weight = kg.
(b) litre (c) km (d) cm

2. (a) 1000 (b) 1 (c) 1
(d) cm (e) cl (f) kl
(g) dm (h) g (i) kg

Task-1

1. 1 metre = 100 centimetre

metres		centimetre
(a) 40 m		4000 cm
(b) 15 m	=	1500 cm
(c) 16 m 5 cm	=	1605 cm

2. 1 kilometre = 1000 metre

kilometre		metre
(a) 3 km	=	3000 m
(b) 6 km 500 m	=	6500 m
(c) 15 km 300 m	=	15300 m

3. 1 kilogram = 1000 gram

kilogram		gram
(a) 75 kg	=	75000 gm
(b) 2 kg 500 gm	=	2500 gm
(c) 3 kg 200 gm	=	3200 gm

4. 1 leter = 1000 millilitre

	letre		millilitre
(a)	5 l	=	5000 ml
(b)	2 l 500 ml	=	2500 ml
(c)	24 l	=	24000 ml

Task-2

1. (a)

cm	mm	
50	03	
+ 21	05	Hence, answer is 71 cm 08 mm
71	08	

(b)

kg	g	
42	129	
+ 20	705	Hence, answer is 62 kg 834 g.
62	834	

(c)

l	ml	
3	859	1000 ml = 1 litre
		so 859 + 520 = 1379 ml
+ 4	520	1379 ml = 1 litre 379 ml
8	379	Hence, answer is 8 l 379 ml

(d)

km	m	
7	500	
+ 3	200	Hence, answer is 10 km 700 m.
10	700	

(e)

m	cm	
16	53	100 cm = 1 metre
		so 53 + 52 = 105 cm
+ 7	52	105 cm = 1 m 05 cm
24	05	Hence, answer is 24 m 05 cm

(f)

km	m	cm	
14	300	32	100 cm = 1m
			so 32 + 80 = 112 cm
+ 25	200	80	112 cm = 1m 12 cm
39	501	12	Hence, answer is 39 km 501 m 12 cm

2. (a)

kg	g	
45	250	1000 gm = 1 kg
16	400	250 + 400 + 815 = 1465 g
+ 7	815	1465 g = 1 kg 465 g
69	465	Hence, answer is 69 kg 465 g

(b) l ml
43 360 — 1000 ml = 1 l
21 800 — 360 + 800 + 50 = 1210 ml
15 50 — 1210 ml = 1 l 210 ml
80 210 — Hence, answer is 80 l 210 ml

3. (a) Since 1 km = 1000 m, 4 km = 4000 m
4 km 32 m = 4000 + 32 = 4032 m
21 km 152 m = 21000 + 152 = 21152 m
Hence, 4 km 32 m + 21 km + 52 m = 4032 m + 21152 m
25184 m = 25 km 184 m

(b) 1 kl = 1000 l, 43 × 1000 = 43000 l
43 kl 5 l = 43000 + 5 = 43005 l
48 kl 463 l = 48000 + 463 = 48463 l
Hence, 43 kl 5 l + 48 kl 463 l = 43005 l + 48463 l
= 91468 l = 91 kl 468 l

(c) 1 metre = 100 cm, 41 × 100 = 4100 cm
41 m 25 cm = 4100 + 25 = 4125 cm
20 m 5 cm = 2000 + 5 = 2005 cm
Hence, 41 m 25 cm + 20 m 5 cm = 4125 + 2005 cm
= 6130 cm = 61 m 30 cm

(d) 1 cm = 10 mm, 62 × 10 = 620 mm
62 cm 7 mm = 620 + 7 = 627 mm
23 cm 6 mm = 230 + 6 = 236 mm
Hence, 62 cm 7 mm + 23 cm 6 mm = 267 + 236
= 863 mm = 86 cm 3 mm

Task-3

1. (a) km m
5 830
– 2 400 — Hence, answer is 3 km 430 m
3 430

(b) kg g
36 600
– 21 600 — Hence, answwer is 15 kg
15 000

(c) cm mm — 1 cm = 10 mm. Hence 4 mm is less 8 mm
15 4 — so we take 1 cm from left it becomes 14 mm
– 4 8 — then subtract
10 6 — Answer is 10 cm 6 mm

(d)
l	ml
36	300
– 6	500
29	800

1 l = 1000 ml. Hence 300 ml is less than 500 ml so we take 1 l from left it becomes 1300 ml then substract.
Answer is 29 l 800 ml

(e)
m	cm
79	70
– 14	90
64	80

1 m = 100 cm. Hence 70 cm is less than 90 cm so we take 1 m from left it becomes 170 cm then subtract
Answer is 64 m 80 cm

(f)
km	m	cm
21	300	65
– 5	175	30
16	125	35

Hence, answer is 16 km 125 m 35 cm

2. (a)
km	m
192	260
– 35	243
157	17

Hence, answer is 157 km 17 m

(b)
kg	gm
53	750
– 46	500
7	250

Hence, answer is 7 kg 250 gm

(c)
kg	m
16	000
– 3	215
12	785

1 km = 1000 m. We take 1 km from left it becomes 1000 m then subtract.
Answer is 12 km 785 m.

(d)
l	ml
36	483
– 15	320
21	163

Hence, answer is 21 l 163 ml

Task-4

1. (a)
km	m
12	825
×	5
64	125

1 km = 1000 m. We multiply 825 m by 5 we get 4125
4125 m = 4 × 1000 m + 125 m = 4 km + 125 m
Then add we get 64 km 125 m

(b)
kg	g
36	652
×	7
256	564

1 kg = 1000 g. First we multiply 652 by 7 we get 4564g
4564 g = 4 × 1000 gm + 456 gm = 4 kg + 456 gm
Answer = 256 kg 564 g

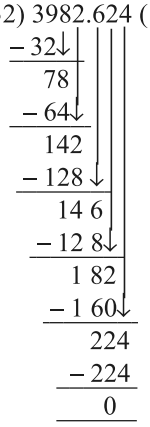
(c) m cm
57 75
× 11
635 25

1 m = 100 cm. We multiply 75 cm by 11 we get 825 cm
825 cm = 8 × 100 cm 25 cm = 8 m 25 cm
Answer = 635 m 25 cm

(d) l ml
20 825
× 15
312 375

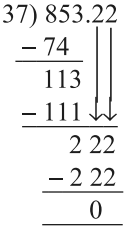
1 l = 1000 ml. We multiply 825 ml by 15 we get 12375 ml
12375 ml = 12 × 1000 ml + 375 ml
= 12 l + 375 ml
Answer = 312 l 375 ml

2. (a) 32) 3982.624 (124.457



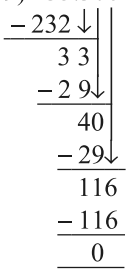
Quotient = 124 kg 457 gm

(b) 37) 853.22 (23.06



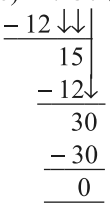
Hence, Quotient = 23 m 06 cm

(c) 29) 235.306 (8.114



Hence, Quotient 8 kg 114 gm

(d) 6) 12.150 (2.025



Hence, Quotient is 2 l 025 ml

3. (a) A container contains oil = 16 l 50 ml
Oil used = – 4 l 250 ml
Oil left in container = 11 l 800 ml

∴ We take 1 l from left 50 ml becomes 1050 ml

(b) Mr. John travelled by car = 52 km 600 m
Mr. John travelled by aeroplane = + 1600 km 50 m
Total distance travelled = 1652 km 650 m

(c) Rana's father baked cake = 6 kg 775 g
Cake consumed at party = – 3 kg 370 g
Cake left = 3 kg 405 g

(d) 2 kg = 2 × 1000 gm = 2000 gm
Box weight = 2000 gm
Chocolate weight = 50 gm
Number of chocolate kept = 50) 2000 (40
– 200↓
00
Answer is 40

(e) 4 km 560 m = 4 × 1000 m + 560 m = 4560 m
Garden total length = 4506 m
Rose planted with gap = 20 m
No of rose plant planted = 20) 4560 (228
– 40↓
56
– 40
160
Answer is 228 – 160
0

(f) 26 l = 26 × 1000 ml = 26000 ml
To pour pepsi into bottles = 26000 ml
Bottle contain pepsi = 500 ml
Number of bottle required = 500) 26000 (52
– 2500↓
1000
So answer is 52 – 1000
0

(g) Tailor use cloth for making shirt = 3 m 20 cm
Length of cloth required 22 shirt = × 22
Hence 440 cm = 4 m 40 cm = 70 m 40 cm

Catch The Concept

1. (a) 1 kg = 1000 gm
7 kg = 7 × 1000 gm = 7000 gm

(b) 1 km = 1000 m
15 km = 15 × 1000 m = 15000 m

2. (a) 1000 g = 1 kg
8504 g = 8 × 1000 gm + 504 g = 8 kg 504 g
(b) 1000 m = 1 km
9630 m = 9 × 1000 m + 630 m = 9 km 630 m

3. (a)

kg	g	
3	710	Hence 1000 gm = 1 kg
30	410	So 710 + 410 + 150 = 1270 gm
+ 8	150	1270 gm = 1 kg 270 gm
42	270	Answer is 42 kg 270 gm

(b)

l	ml	
14	320	
5	200	
+ 263	000	Hence, answer is 282 l 520 ml
282	520	

4. Length of each piece of cloth = 5 m 30 cm
Renu's father bought piece of cloth = × 4
Total length of all the pieces = 21 m 20 cm

∴ 4 × 30 = 120 cm = 1 × 100 cm + 20 cm = 1 m 20 cm

Apply Your Mind!

1. (c)

2. 6 kg 500 g = 6 × 1000 g + 500 g = 6500 g
No. of salt packet required = 500) 6500 (13
− 500↓
1500
− 1500
0
Answer is 13

3. Pole A = 2 pole B, pole C = pole A − 290 cm, pole l = 1850 cm
Pole A = 1850 + 290 = 2140 cm, pole B = $\frac{2140}{2}$ = 1070
Total = 1850 + 2140 + 1070 = 5060 cm

❑

11. Measure of Time

Just 4 fun

Do yourself.

Learning through Puzzle

Do yourself.

Task-1

1. Do yourself.

2. (a) 1 : 15 — Quarter past 1 O'clock
(b) 2 : 30 — Half past 2 O'clock
(c) 11 : 45 — Quarter to 12 O'clock
(d) 10 : 40 — 20 mins to 11 O'clock

3. (a) A.M. (b) P.M. (c) P.M. (d) P.M. (e) P.M.

4.
(A) Quarter past 3 : 00 → (c) 3 : 15
(B) Quarter to 3 : 00 → (e) 2 : 50
(C) Half past 3 : 00 → (d) 3 : 30
(D) Ten to 3 : 00 → (a) 2 : 45
(E) Ten past 3 : 00 → (b) 3 : 10

Task-2

Time of 24 hrs clock

1. (a) 6 : 30 (b) 8 : 00 (c) 12 : 30 (d) 16 : 00
(e) 18 : 00 (f) 19 : 15 (g) 20 : 30

Learning through puzzle

Anish takes 2 hrs 35 min
1 hr = 60 min, 2 hrs 35 m = $2 \times 60 + 35 = 155$ m
1 min = 60 sec, 155 m = $155 \times 60 = 9300$ sec
Shravan takes 10,500 seconds
Hence Shravan takes more time
Difference = $10500 - 9300 = 1200$ sec or 20 min.

Learning Target 11.1

1. (a) 1 hour = 60 minute
So 3 hours = 3×60 min = 180 min

(b) 240 min = $\frac{240}{60} = 4$ hr

(c) 560 min = $\frac{560}{60} = 9$ hr 20 min

(d) 4 hr 45 min = $4 \times 60 + 45 = 285$ min

2. 1 min = 60 sec

(a) 20 min = 20×60 sec = 1200 sec

(b) 150 sec = $\frac{150}{60} = 2$ min 30 sec

(c) 3 min 50 sec = $3 \times 60 + 50$ sec = 230 sec

(d) 720 sec = $\frac{720}{60} = 12$ min

3. 1 day = 24 hrs

(a) 380 hr = $\frac{380}{24}$ = 24) 380 (15 Hence, 15 days 20 hrs

$-\ 24$

140

$-\ 120$

20

(b) 482 hr = $\frac{482}{24}$ = 20 days 2 hrs.

(c) 820 hrs = $\frac{820}{24}$ = 34 days 4 hrs.

4. 1 year = 12 month

(a) 68 month = $\frac{68}{12}$ = 5 year 8 month

(b) 312 month = $\frac{312}{12}$ = 26 year

(c) 37 month = $\frac{37}{12}$ = 3 year 1 month

Learning Target 11.2

1. (a)

min	sec	
	48	48 + 15 = 63 = 1 min 3 sec
+	15	because 1 min = 60 sec
1	3	Answer is 1 min 3 sec

(b)

hr	min	
2	32	1 hr = 60 min
+ 4	46	so 32 min + 46 min = 78 = 1 hr 18 min
7	18	Answer is 7 hr 18 min

(c)

hr	min	sec	
48	40	26	1 min = 60 sec
+ 15	26	34	So 26 + 34 = 60 sec = 1 min
64	7	00	1 hr = 60 min
			40 + 26 + 1 = 67 min = 1 hr 7 min
			Answer is 64 hr 7 min

2. (a)

years	months	
9	4	
+ 3	6	Answer is 12 years 10 months.
12	10	

(b)

years	months	
11	11	1 year = 12 months
+ 13	8	11 + 8 = 19 months = 1 year 7 months
25	7	Answer is 25 years 7 months

(c)

years	months	
4	7	1 year = 12 months
+ 5	10	7 + 10 = 17 months = 1 year 5 months
10	5	Answer is 10 years 5 months

3. (a)

min	sec	
12	25	
+ 14	23	Hence, answer is 26 min 48 sec
26	48	

(b)

months	days	
4	8	
+ 7	10	Hence, answer is 11 months 18 days
11	18	

Task-3

1. (a)

hr	min	
18	00	
− 13	00	Total elapsed time = 5 hr
05	00	

(b)

hr	min	
18	40	
− 15	20	Total elapsed time = 3 hr 20 min
03	20	

(c)

hr	min	
10	40	
− 6	10	Total elapsed time = 4 hr 30 min
4	30	

(d)

hr	min	
8	45	
− 3	00	Total elapsed time 5 hr 45 min
5	45	

Learning Target 11.3

1. (a)

min	sec	
30	40	
− 28	26	Answer is 2 min 14 sec
02	14	

(b)

min	sec	
3	52	
– 1	03	Answer is 2 min 49 sec
2	49	

(c)

hr	min	sec	
15	18	25	**Step 1 :**
– 6	30	48	1 min = 60 sec
8	47	37	So 25 min is smaller than 48 min
			So we take min from left
			It become 60 + 25 = 85 sec

Step 2 : After borrowing 18 m – 1 = 17 min. Hence 17 < 30
Hence, borrow 1 hr *i.e.* 60 min. Now 60 + 17 = 77 min
Now 77 min – 30 = 47 min

Step 3 : After borrowing 15 hr – 1 = 14 hr = 14 hr – 6 = 8 hr

2. (a)

hr	min	
6	50	
– 3	45	Hence, answer is 3 hr 5 min
3	5	

(b)

years	month	
8	11	
– 3	8	Hence, answer is 5 year 3 month.
5	3	

Learning Target 11.4

1. Ramu reached the office = 10 : 15 am
He started from home = – 8 : 30 am
Total time taken by Ramu = 1 hr : 45 min
Hence 15 < 30 so we take 1 hr = 60 min
60 + 15 min = 75 – 30 = 45 min
After borrowing 10 – 1 = 9 h, 9 – 8 = 1 hr

2.

	hr	min
Sita took time to prepare Ist item =	1	45
Sita took time to prepare IInd item =	2	10
Total time taken by Sita =	3 hr	55 min

3.

	hr	min
Bhanu travelled distance by train =	14	35
Bhanu travelled distance by bus =	+ 3	25
Total time taken by Bhanu =	18 hr	0 min

Hence, 35 + 25 min = 60 min = 1 hr
So 14 + 3 + 1 = 18 hr

		hr	min
4. Ram takes computer classes everyday	=	1	30
Total time in 4 days	=	×	4
		6 hr	00 min

Hence $30 \times 4 = 120$ min $= 2$ hr

4×1 hr $+ 2$hr $= 6$ hr

5. School closed on = 3 May 2016

School opened on = – 6 July 2016

School remain closed = 64 days

May have 31 days, June have 30 days, July have 31 days

So total number of days of May $= 31 - 2 = 29$ days

June have = 30 days, July days closed = 5 days

So total number of days $= 29 + 30 + 5 = 64$ days

6. Gautam's boy born on = April 26, 2011

Gautam's Girl born on = August 28, 2015

So Gautam's boy is elder because his boy born earlier than girl. First we subtract year = 2015 – 2011 = 4 year. After year we subtract month = August is 8th month and April is the 4th month = 8 – 4 = 4 month.

Then we subtract day = 28 – 26 = 2 day

So answer is **4 years 4 months 2 days**

Task-4

1. (a) 4 Sundays

(b) 4 Wednesdays

(c) Monday in March + Monday in April = 4 + 4 = 8 Mondays

2. (a) Month have 30 days = 4 month

Month have 31 days = 7 month

(b) February is the shortest month.

(c) February, April, June, September, November.

Catch The Concept

1. Do yourself.

2. (a) A.M. (b) P.M. (c) P.M. (d) P.M.

3. (a) 21 : 15 (b) 20 : 10 (c) 0 : 00 (d) 12 : 00

Apply Your Mind!

		min	sec
1. Soni took time from first route	=	15	7
Soni took time from another route	=	– 13	24
She save time from another route	=	1 min	43 sec

Hence $7 < 24$. So we take 1 min = 60 sec from left
i.e., $= 60 + 7 = 67$ sec $= 67 - 24 = 43$ sec
After following $15 - 1 = 14 = 14 - 13 = 1$ min

2. Geeta went to park = 4 hr 20 min
Father told her to be back home after = 1 hr 30 min
Geeta need time to return home = 5 hr 50 min

3. Gandhi Jayanti is on 2nd October
So 10 days after Gandhi Jayanti is $10 + 2$ days
i.e., October 12, Hence answer is Thursday 12 October.

12. Basic Geometrical Concepts

Task-1

(a) Cube (b) Cuboid
(c) Cone (d) Cylinder

Just 4 fun

Do yourself.

Task-2

1. (a) 6 line segment (b) 10 line segment
(c) 10 line segment (d) 9 line segment
2. Do yourself.
3. Do yourself.
4. (a) Line segment (b) Ray (c) Line

Learning Target 12.1

1. (a) Angle is at vertex Q.
So angles are $\angle PQR, \angle RQP$
(b) Angle is at vertex B
So angles are $\angle ABC, \angle CBA$
(c) Angle is at vertex M
So angles are $\angle LMN, \angle NML$

2. (a) Vertex = B
Arm = BA, BC
(b) Vertex = D
Arm = DE, DF
(c) Vertex = N
Arm = NL, NM
(d) Vertex = Y
Arm = YX, YZ

(e) Vertex = X
Arm = XZ, XY

(f) Vertex = M
Arm = ML, MN

3. (a) Angles = $\angle XWY$, $\angle XWY$, $\angle YWZ$

(b) Angles = $\angle ABC$, $\angle ABD$, $\angle DBC$

4. Do yourself.

5. (a) Points interior of $\angle ABC = XYZ$

(b) Points exterior of $\angle ABC = M, N$

(c) Points on $\angle ABC = A, L, B, C$

Task-3

1. (a) 1. Acute angle
2. Obtuse angle
3. Acute angle

(b) 1. Right angle

(c) 1. Acute angle
2. Acute angle

(d) 1. Acute angle
2. Obtuse angle
3. Acute angle
4. Obtuse angle

2. Acute angle is between 0° to 90°
Obtuse angle is between 90° to 180°
Right angle is exactly 90°
Straight angle is exactly 180°

(a) Acute angle (b) Right angle (c) Acute angle
(d) Obtuse angle (e) Straight angle (f) Obtuse angle

Learning Target 12.2

1. Do yourself.

2. (a) Angle more than 90°
So obtuse angle

(b) Angle less than 90°
So acute angle

(c) Angle less than 90°
So acute angle

(d) Angle exactly 90°
So right angle

(e) Angle exactly 180°
So straight angle

(f) Angle exactly 90°
So right angle

Learning through puzzle

Acute angle—$\angle SOR$, $\angle ROT$, $\angle TOU$, $\angle UOV$
Obtuse angle—$\angle UOQ$, $\angle VOQ$, $\angle SOV$, $\angle ROP$
Right angle—$\angle TOP$, $\angle TOQ$

Just 4 fun

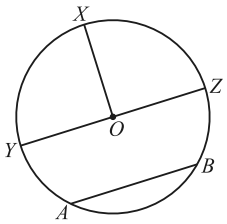
Do yourself.

Task-4

1. (a) Diameter (b) Centre (c) 2 times of
(d) Circumference (e) Equal parts

2. (a) OA (b) PQ (c) XY (d) O

3.



4. Radius $= \frac{\text{Diameter}}{2}$, Diameter $= 2 \times$ Radius

(a) Diameter = 20 cm so Radius $= \frac{20}{2} = 10$ cm

(b) Radius = 6 cm, Diameter $= 2 \times 6 = 12$ cm

(c) Diameter = 14 cm, Radius $= \frac{14}{2} = 7$ cm

(d) Radius = 8 cm, Diameter $= 2 \times 8 = 16$ cm

5. Do yourself.

Task-5

1. Figure (a), (b), (c) are symmetrical.

2. In the given question figure (a), (b), (e), (f) are symmetrical figures.

3. Do yourself.

Just 4 fun

Do yourself.

Catch The Concept

1. (a) Vertex (b) Triangle (c) Cube
(d) Opposite (e) One (f) Line segment
(g) Line (h) Line segment

2. (a) True (b) True (c) True
(d) True (e) False

3. (a) Line segments are $AB, BC, CD, DE, EF, FG, GH, HA$
So there are 8 line segment.

(b) Line Segments are $AB, BC, CD, DA, OC, OB, OA, OD, DB, AC$
So there are 10 line segment

(c) Line segments are $AB, BC, CD, DA, OB, OC, OD, OA, BD, AC$
So there are 10 line segment.

Apply Your Mind!

1. Given figure have 10 triangles.
2. Given figure have 6 squares.
3. All the lines has correct line of symmetry.

❑

13. Perimeter and Area

Task-1

1. (a) Perimeter of a rectilinear figure = sum of the length of all sides
$= 3\text{ cm} + 8\text{ cm} + 10\text{ cm} + 5\text{ cm} + 7\text{ cm} + 2\text{ cm} = 35\text{ cm}$

(b) Perimeter of a rectilinear figure = sun of the length of all sides.
$= 9\text{ cm} + 12\text{ cm} + 7\text{ cm} + 3\text{ cm} + 2\text{cm} + 8\text{ cm} = 41\text{ cm}$

(c) Perimeter of a rectilinear figure = sun of the length of all sides.
$= 7\text{ cm} + 2\text{ cm} + 3\text{ cm} + 2\text{ cm} + 2\text{ cm} + 1\text{ cm} + 6\text{ cm} + 5\text{ cm}$
$= 28\text{ cm}$

(d) Perimeter of a rectilinear figure = sun of the length of all sides.
$= 2.5\text{ cm} + 2.5\text{ cm} + 1.5\text{ cm} + 1.5\text{ cm} + 4\text{ cm} + 5\text{ cm} + 3\text{ cm} + 1\text{ cm}$
$= 21\text{ cm}$

2. Perimeter of a square = 4 × side of a square

(a) Side of a square = 4 cm
So perimeter of a square $= 4 \times 4\text{ cm} = 16\text{ cm}$

(b) Side of a square = 6 cm
So perimeter of a square $= 4 \times 6\text{ cm} = 24\text{ cm}$

(c) Side of a square = 3.5 cm
So perimeter of a square $= 4 \times 3.5\text{ cm} = 14\text{ cm}$

3. Perimeter of rectangle = 2 (length + breadth)

(a) Length of rectangle = 4 cm, Breadth of rectangle = 3 cm
Perimeter of rectangle = 2 (length + breadth)
$= 2(4+3) = 2 \times 7 = 14\text{ cm}$

(b) Length of rectangle = 6 cm, Breadth of rectangle = 2 cm
Perimeter of rectangle = 2 (length + breadth)
$= 2(6+2) = 2 \times 8 = 16\text{ cm}$

(c) Length of rectangle = 3.5 cm, Breadth of rectangle = 2.5 cm
Perimeter of rectangle = 2 (length + breadth)
$= 2(3.5+2.5) = 2\times 6 = 12\,\text{cm}$

4. Perimeter of a square $= \dfrac{\text{side of square}}{4}$

(a) Side of square = 64

Perimeter of a square $= \dfrac{64}{4} = 16\,\text{cm}$

(b) Side of a square = 48

Perimeter of a square $= \dfrac{48}{4} = 12\,\text{cm}$

(c) Side of a square = 144

Perimeter of a square $= \dfrac{144}{4} = 36\,\text{cm}$

Learning through puzzle

$PR = 12\,\text{cm}$, $QA = 6\,\text{cm}$

$PR = QA + AS$, $12 = 6 + AS$, $AS = 12 - 6 = 6$

$BD = AS + SC$, $15 = 6 + SC$, $SC = 15 - 6 = 9\,\text{cm}$

Learning Target 13.1

1. Length of iron wire to fence a ground
whose length is 15 m and breadth is 10 m
$\therefore$ Length of iron wire = 2 (length + breadth) $= 2(15+10)$
$= 2\times 25 = 50\,\text{m}$

2. Perimeter of a equilateral triangle = sun of all sides of equilateral triangle
Perimeter of ΔAOB as shown is figure $= OA + OB + AB$
$= 3+3+5 = 11\,\text{m}$
Perimeter of ΔCOD as shown in figure $= OC + OD + CD$
$= 3+3+5 = 11\,\text{m}$
Total perimeter of $\Delta AOB + \Delta COD = 11\,\text{m} + 11\ \text{m} = 22\ \text{m}$

3. Perimeter of equilateral triangle = sun of side of equilateral triangle
Perimeter of equilateral triangle $= 25+25+25 = 75\,\text{cm}$
Cost of making the path is ₹ 60 per metre
So, total cost = ₹ 60×75 = ₹ **4500**

Task-2

1. (a) In fig (a) there are 14 square
Area of 1 square = $(\text{side})^2$, side = 1 sq. cm

Area of 1 square = $(1)^2$ = 1×1 = 1 sq. cm

So, area of all 14 squares = 14×1 = 14 sq. cm

(b) In fig (b) there are 20 square

Area of 1 square = $(\text{side})^2$, side = 1 sq. cm

Area of 1 square = $(1)^2$ = 1×1 = 1 sq. cm

So, area of all 20 squares = 20×1 = 20 sq. cm

(c) In fig (c) there are 22 square

Area of 1 square = $(\text{side})^2$, side 1 sq. cm

Area of 1 square = $(1)^2$ = 1×1 = 1 sq. cm

So area of 22 squares = 22×1 = 22 sq. cm

(d) In fig (d) there are 16 square

Area of 1 square = $(\text{side})^2$, side = 1 sq. cm

Area of 1 square = $(1)^2$ = 1×1 = 1 sq. cm

So, area of 16 square = 16×1 = 16 sq. cm

2. (a) Area of square = $(\text{side})^2$, side = 14 cm

Area of square = $(14)^2$ = 14×14 = 196 sq. cm

(b) Area of square = $(\text{side})^2$, side = 21 cm

Area of square = $(21)^2$, = 21×21 = 441 sq. cm

(c) Area of square = $(\text{side})^2$, side 18 cm

Area of square = $(18)^2$ = 18×18 = 324 sq. cm

3. (a) Area of rectangle = length × breadth

Length = 12 cm breadth 8 cm

Area of rectangle = 12 cm ×8 cm = 96 sq. cm

(b) Area of rectangle = length × breadth

Length 12.5 cm, breadth 16.6 cm

Area of rectangle = 12.5 cm × 16.6 cm = 207.5 sq. cm

(c) Area of rectanlge = length × breadth

length = 12 m, breadth = 3.2 m

Area of rectangle = 12 m × 3.2 m = 38.4 sq. m

(d) Area of rectangle = length × breadth

length = 15 m, breadth = 5 m

Area of rectangle = 15 m × 5m = 75 sq. m

4. Length × Breadth = Area

(a) 5 m × 7m = 35 square metres.

(b) 9 cm × 7 cm = 63 square centimetres.

(c) 6 cm × 6 cm = 36 square centimetres.

(d) 6 m × 3 m = 18 square metres.

5. (a) $AB = CD = 2\,\text{cm}$, $EF = GH = 2\,\text{cm}$

$BI = EJ = 10\,\text{cm}$

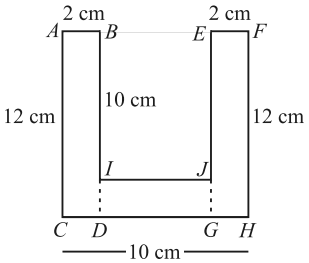
$AC - BI = ID = 12\text{ cm} - 10\text{ cm} = 2\text{ cm}$

$FH - EJ = JG = 12\text{ cm} - 10\text{ cm} = 2\text{ cm}$

Hence $= IJ = DG$

$= DG = CH - (AB + EF)$

$= 10 - (2 + 2) = 6\,\text{cm}$



Hence area of rectangle $ABCD$ $= \text{length} \times \text{breadth}$

$= 12\,\text{cm} \times 2\,\text{cm} = 24\text{ sq. cm}$

Area of rectangle $EFGH$ $= \text{length} \times \text{breadth}$

$= 12\,\text{cm} \times 2\,\text{cm} = 24\text{ sq. cm}$

Area of rectangle $DGIJ$ $= \text{length} \times \text{breadth}$

$= 6\text{ cm} \times 2\text{ cm} = 12\text{ sq. cm}$

Total area of all rectangles $= 24\text{ sq. cm} + 24\text{ sq. cm} + 12\text{ sq. cm}$

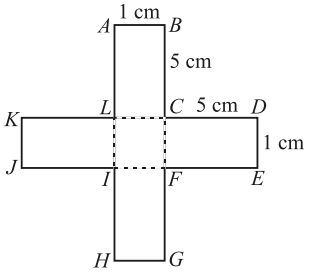
$= 60\text{ sq. cm}$

(b) In the given figure :

$AL = BC = 5\,\text{cm}$, $FG = IH = 5\,\text{cm}$

$CD = EF = 5\,\text{cm}$, $KL = JI = 5\,\text{cm}$

$LC = CF = FI = IL = 1\,\text{cm}$



Area of rectangle $ABCL$

$= \text{length} \times \text{breadth}$

$= 5\text{ cm} \times 1\text{ cm}$

$= 5\text{ sq. cm}$

Area of rectangle $CDEF$

$= \text{length} \times \text{breadth}$

$= 5\text{ cm} \times 1\text{ cm} = 5\text{ sq. cm}$

Area of rectangle $FGHI$ $= \text{length} \times \text{breadth}$

$= 5\text{ cm} \times 1\text{ cm} = 5\text{ sq. cm}$

Area of rectangle $IJKL$ $= \text{length} \times \text{breadth}$

$= 5\text{ cm} \times 1\text{ cm} = 5\text{ sq. cm}$

Area of square $LCFI$ $= (\text{side})^2$

$= (1)^2 = 1\text{ cm} \times 1\text{ cm} = 1\text{ sq. cm}$

Total area of figure = total area of all rectangle + area of square

$= 5\text{ sq. cm} + 5\text{ sq. cm} + 5\text{ sq. cm} + 5\text{ sq. cm}$

$+ 1\text{ sq. cm}$

$= 21\text{ sq. cm}$

Catch The Concept

1. (a) $(\text{side})^2 = \text{side} \times \text{side}$ (b) length × Breadth
(c) $4 \times$ side (d) $3 \times$ side

2. (a) Draw square yourself
Side = 3 cm
Perimeter of square = $4 \times$ side = $4 \times 3 = 12$ cm
(b) Draw square yourself
Side = 4 cm
Perimeter of square = $4 \times$ side = $4 \times 4 = 16$ cm

3. (a) Draw rectangle yourself
length = 5 cm, breadth = 2 cm
Perimeter of rectangle = 2 (length + breadth)
$= 2(5\text{ cm} + 2\text{ cm}) = 2 \times 7\text{ cm} = 14$ cm
(b) Draw rectangle yourself
length = 8cm, breadth = 4 cm
Perimeter of rectangle = 2 (length + breadth)
$= 2(8\text{ cm} + 4\text{ cm}) = 2 \times 12\text{ m} = 24$ cm

Apply Your Mind!

1. $PQ + RS + TU + VW + XY + ZB = AC = 12$ cm
$AP + QR + ST + UV + WX + YZ = BC = 10$ cm
Total distance covered = 12 cm + 10 cm = 22 cm

2. 18 cubes needed to make given figure.

3. Answer (b) is correct.

❑

14. Data Handling

Learning Target 14.1

1. Do yourself.

2. (a) As shown in graph, no. of students likes math subject as the most.
(b) As shown in graph 4 students likes English.
(c) As shown in graph students likes English as the least.

3. (a) As shown in graph Raj spent maximum time at tuesday and Thursday.
(b) Raj practice 1 hour on Wednesday.
(c) Total hours spend during all 4 days
= 2 hours + 4 hours + 1 hour + 4 hours = 11 hours

4. (a) Playground i.e. 3 hours
(b) 9 hours
(c) At home she spend 6 hours
At playground she spend 3 hours
Total number of hours = 6 hours + 3 hours = 9 hours.

5. Each symbol of tree = 8 trees
(a) Mango trees = 4×8 trees = 32 trees
(b) Banyan trees = 5×8 trees = 40 trees
(c) Neem trees = 6×8 trees = 48 trees
(d) Total no. of trees = Total mango trees + Total Banyan trees
+ Total Neem trees
= 32 + 40 + 48 = 120 trees

6. (a) The bar graph shows the number of members in a family for 60 families.
(b) According to graph 10 families have 3 members.
(c) Family having 4 members is the most common.

❑

Model Test Paper-I

1. (a) Seventy eight lakh fifty six thousand five hundred twenty one.
(b) Ninety nine lakh ninety thousand ninety.

2. (a)

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

(b)

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

(c)

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

3. Money spent for digging a tube well = ₹ 284500
Money spent on a medical help = + ₹ 163000
Total amount spent = 447500

4. Candidate B got total votes = 885765
Candidate A got less votes than B = − 2458
Candidate A got votes = 883307

5. (a)
$$\begin{array}{r} 613 \\ \times\ 505 \\ \hline 3065 \\ 0000 \\ +\ 306500 \\ \hline 309565 \end{array}$$

(b)
$$\begin{array}{r} 8946 \\ \times\ 130 \\ \hline 0000 \\ 268380 \\ +\ 894600 \\ \hline 1162980 \end{array}$$

(c)
$$\begin{array}{r} 4823 \\ \times\ 789 \\ \hline 43407 \\ 385840 \\ +\ 3376100 \\ \hline 3805347 \end{array}$$

6. (a) $\frac{4300}{10} = 430$ (b) $\frac{460}{10} = 46$

(c) $\frac{3200}{100} = 32$ (d) $\frac{8000}{1000} = 8$

7. L.C.M. of 24 and 36 =

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

L.C.M. = $2\times2\times2\times3\times3 = 72$

H.C.F. of 24 and 36 =

$$\begin{array}{r} 24)\ 36\ (1 \\ -\ 24 \\ \hline 12)\ 24\ (2 \\ -\ 24 \\ \hline 0 \end{array}$$

H.C.F. = 12

8. $3\frac{4}{10} + 3\frac{1}{5} = \frac{34}{10} + \frac{16}{5} = 3.4 + 3.2 = 6.6$

$$\begin{array}{r} 12.0 \\ -\ 6.6 \\ \hline 5.4 \end{array}$$

❑

Model Test Paper-II

1. (a) 0.03 (b) 26.1 (c) 0.807 (d) $\frac{302}{100} = 3.02$

2. Total money receive by Suresh = ₹ 200
Now, cost of a book = ₹ 96
and cost of the board game = + ₹ 57
Spent total money = ₹ 153
The total money left = ₹ 200
= − ₹ 153
= ₹ 47

3. (a) $40 \times 100 = 4000$ cm

(b) $\frac{1500}{100} = 15$ m

(c) $16 \times 100 + 5$ cm $= 1600 + 5 = 1605$ cm

4. Tailor used cloth for making a shirt = 3 m 20 cm
Length of cloth required 22 shirts = × 22
Hence, 440 cm = 4m 40 cm = 70 m 40 cm

5. Do it yourself.

6. Do it yourself.

7. Length of iron wire to fence a ground
whose length is 15 m and breadth is 10 m
∴ Length of iron wire = 2 (length + breadth) = 2 (15 + 10)
$= 2 \times 25 = 50$ m

❑