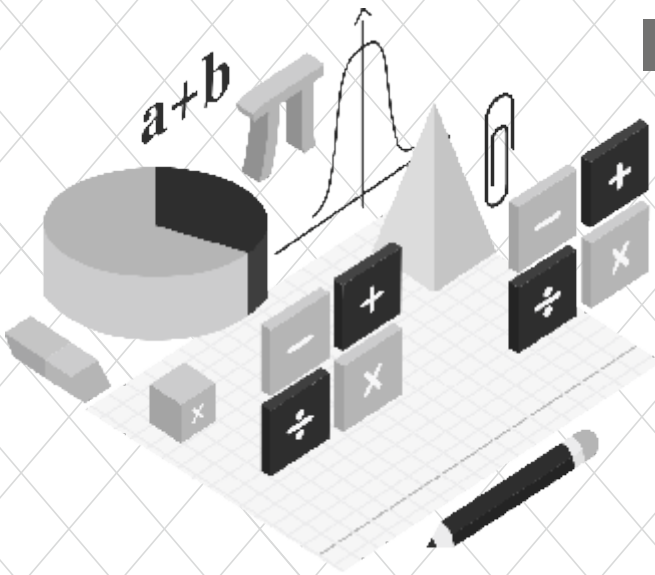


Maths Link

Teacher Manual

Class 6



CLASS-6

Knowing Our Numbers CHAPTER - 1

Practice Time - 1.1

- A**
1. Place value of 3 is 30 face value of 3 is 3.
 2. Place value of 2 is 200 face value of 2 is 2.
 3. Place value of 2 is 2000. face value of 2 is 2.
 4. Place value of 8 is 800000. face value of 8 is 8.
 5. Place value of 6 is 6000 face value of 6 is 6.
 6. Place value of 5 is 50000. face value of 5 is 5.
- B**
1. Indian system: 50, 63, 902 - fifty lakh sixty three thousand nine hundred and two.
International system : 5, 063, 902 - five million sixty three thousand nine hundred and two.
 2. Indian system : 33,33,033 - Thirty three lakh thirty three thousand thirty three
International system: 33,33,,033 - Three million three hundred thirty three thousand thirty three.
 3. Indian system 5, 78, 346 - five lakh seventy eight thousand three hundred forty six.
International system - 578, 346 - five hundred seventy eight thousand three hundred and forty six.
 4. 8,32,59,678 : Indian system - Eight crore thirty two lakh fifty nine thousand six hundred and seventy eight.
International system : 83,25,9678 - Eighty three million two hundred fifty nine thousand six hundred seventy eight.
 5. Indian system : 6,23,421 - Six lakh twenty three thousand four hundred twenty one.
International system : 6,23,421 - Six hundred twenty three thousand four hundred and twenty one.
 6. Indian system : 4,00,10,809 - Four crore ten thousand eight hundred and nine.
International system : 40,010,809 - forty million ten thousand eight hundred and nine.

7. Indian system: 32,510 - Thirty two thousand five hundred and ten

International system 32,510 - Thirty two thousand five hundred and ten

8. Indian system 25,37,590 - Twenty five lakh thirty seven thousand five hundred ninety.

International system 2,537,590 - Two million five hundred thirty seven thousand five hundred and ninety.

- C** 1. $63972 \rightarrow 60000 + 3000 + 900 + 70 + 2$
2. $2437 \rightarrow 2000 + 400 + 30 + 7$
3. $100235 \rightarrow 100000 + 200 + 30 + 5$
4. $8453765 \rightarrow 8000000 + 400000 + 50000 + 3000 + 700 + 60 + 5$
5. $42103 \rightarrow 40000 + 2000 + 100 + 3$
6. $57062319 \rightarrow 50000000 + 7000000 + 60000 + 2000 + 300 + 10 + 9$

- D** 1. $200000 + 200 + 2 = 200202$ 2. 3579614
3. 80107 4. 7070006 5. 364382
6. 682063

- E** 1. Indian system = 79,00,690
International system = 7,900,690
2. Indian system = 29,27,25,387
International system = 292,725,387
3. Indian system = 16,77,652
International system = 1,677,652

- F** 1. 223 2. 4595 3. 48764 4. 89500
5. 22 6. 79013

- G** 1. 5929 2. 299 3. 32155 4. 78922
5. 109874 6. 567979

Practice Time 1.2

1. 1. > 2. > 3. < 4. >
5. < 6. <

- B** 1. 7,80,643; 8, 28,867; 80,25,957; 1,56,34,123.

2. 8,53,60,295; 8,93,40,294; 9,45,04,949; 9,64,90,365

C The number are 645, 654, 564, 546, 465, 456

Descending order 654, 645, 564, 546, 465, 456

D 9000

E 9,999,876

F 6,88,77,543; 6,88,23,526; 5,98,48,234; 5,98,37,422; 5,98,37,022

Practice Time 1.3

A 1. 1990

Place Value - 0 face value -0

Place value - 90 face value -9

Place value - 900 face value -9

Place value - 1000 face value 1

2. 400

Place value - 0 face value -0

Place value - 0 face value -0

Place value - 400 face value -4

3. 65

Place value -5 face value -5

Place value -60 face value -6

B 1. XV 2. XXI 3. XC 4. XLI
5. LXXXV 6. XCIX 7. XLVII 8. CXXIII
9. CM 10. CCLXV

C 1. 63 2. 166 3. 446 4. 23
5. 154 6. 400 7. 766 8. 40
9. 44 10. 89 11. 100 12. 51
13. 54 14. 76 15. 210 16. 700

D 2. VCX, greater value should not follow lesser values as C should not follow V.

3. ILD, greater value should not follow lesser value L should not follow I.

4. XVV, writing VV is not a correct way.

Practice Time 1.4

$$\begin{array}{r} \mathbf{A\ 1.} \quad 1\ 2\ 5\ 2\ 1\ 2\ 3 \\ \quad \quad 3\ 1\ 6\ 4\ 3\ 0 \\ \quad \quad \quad 3\ 4\ 3\ 4\ 5 \\ + \quad \quad \quad 4\ 0\ 0 \\ \hline 1\ 6\ 0\ 3\ 2\ 9\ 8 \end{array}$$

Ans. 1,603,298

$$\begin{array}{r} \mathbf{3.} \quad 8\ 5\ 6\ 4\ 0\ 9 \\ \quad \quad 3\ 0\ 6\ 6\ 1 \\ \quad \quad \quad 1\ 0\ 1\ 1\ 1 \\ + \quad \quad 9\ 9\ 9\ 5 \\ \hline 9\ 0\ 7\ 1\ 7\ 6 \end{array}$$

Ans. 907176

$$\begin{array}{r} \mathbf{B\ 1.} \quad 3\ 5\ 3\ 4\ 5\ 2\ 7\ 1 \\ \quad \quad \quad -\ 3\ 4\ 5\ 2 \\ \hline 3\ 5\ 3\ 4\ 1\ 8\ 1\ 9 \end{array}$$

Ans. 35341819

$$\begin{array}{r} \mathbf{3.} \quad 1\ 2\ 3\ 9\ 9\ 9 \\ \quad \quad -\ 1\ 1\ 5\ 0\ 0\ 0 \\ \hline 8\ 9\ 9\ 9 \end{array}$$

Ans. 8999

$$\begin{array}{r} \mathbf{C\ 1.} \quad \quad \quad 9\ 4\ 8 \\ \quad \quad \quad \times 2\ 4\ 3 \\ \hline \quad \quad \quad 2\ 8\ 4\ 4 \\ \quad \quad 3\ 7\ 9\ 2\ 0 \\ \quad 1\ 8\ 9\ 6\ 0\ 0 \\ \hline 2\ 3\ 0\ 3\ 6\ 4 \end{array}$$

Ans. 230364

$$\begin{array}{r} \mathbf{3.} \quad \quad \quad 1\ 1\ 2\ 9 \\ \quad \quad \quad \times 2\ 7\ 2 \\ \hline \quad \quad \quad 2\ 2\ 5\ 8 \\ \quad \quad 7\ 8\ 9\ 3\ 0 \\ \quad 2\ 2\ 5\ 8\ 0\ 0 \\ \hline 3\ 0\ 7\ 0\ 8\ 8 \end{array}$$

Ans. 307088

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

Ans. 4112134

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

Ans. 193786

$$\begin{array}{r} \mathbf{2.} \quad 2\ 0\ 0\ 0\ 0\ 0\ 0 \\ \quad \quad \quad -\ 1\ 9\ 9\ 9\ 9 \\ \hline 1\ 9\ 8\ 0\ 0\ 0\ 1 \end{array}$$

Ans. 1980001

$$\begin{array}{r} \mathbf{4.} \quad 8\ 9\ 7\ 6\ 5\ 0 \\ \quad \quad -\ 5\ 6\ 4\ 7\ 8 \\ \hline 8\ 4\ 1\ 1\ 7\ 2 \end{array}$$

Ans. 841172

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

Ans. 217100

$$\begin{array}{r} \mathbf{4.} \quad \quad \quad 4\ 4\ 0 \\ \quad \quad \quad \times 3\ 5\ 7 \\ \hline \quad \quad \quad 3\ 0\ 8\ 0 \\ \quad \quad 2\ 2\ 0\ 0\ 0 \\ \quad 1\ 3\ 2\ 0\ 0\ 0 \\ \hline 1\ 5\ 7\ 0\ 8\ 0 \end{array}$$

Ans. 157080

D 1. 77700 2. 76200 3. 11100 4. 456000

5. 5670000 6. 203000 7. 11200000 8. 4530

9. 7890 10. 5600 11. 8970

12. 34200

E 1. 12000 2. 160000 3. 140000 4. 60000

5. 300 6. 1000

F 1.
$$\begin{array}{r} 197 \\ 34 \overline{)6709} \\ \underline{-34} \downarrow \downarrow \\ 330 \downarrow \\ \underline{306} \downarrow \\ 249 \\ \underline{-238} \\ 11 \end{array}$$

2.
$$\begin{array}{r} 71 \\ 17 \overline{)1209} \\ \underline{-119} \downarrow \\ 19 \\ \underline{17} \\ 2 \end{array}$$

3.
$$\begin{array}{r} 225 \\ 97 \overline{)21900} \\ \underline{-194} \downarrow \downarrow \\ 250 \downarrow \\ \underline{194} \downarrow \\ 560 \\ \underline{-485} \\ 75 \end{array}$$

4.
$$\begin{array}{r} 101 \\ 56 \overline{)5678} \\ \underline{-56} \downarrow \downarrow \\ 78 \\ \underline{-56} \\ 22 \end{array}$$

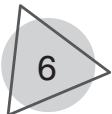
5.
$$\begin{array}{r} 117 \\ 67 \overline{)7865} \\ \underline{-67} \downarrow \downarrow \\ 116 \downarrow \\ \underline{-67} \downarrow \\ 495 \\ \underline{-469} \\ 26 \end{array}$$

6.
$$\begin{array}{r} 1346 \\ 34 \overline{)45789} \\ \underline{34} \downarrow \downarrow \downarrow \\ 117 \downarrow \\ \underline{102} \downarrow \\ 158 \downarrow \\ \underline{136} \downarrow \\ 229 \\ \underline{204} \\ 25 \end{array}$$

7.
$$\begin{array}{r} 209 \\ 52 \overline{)10908} \\ \underline{104} \downarrow \downarrow \\ 508 \\ \underline{-468} \\ 40 \end{array}$$

8.
$$\begin{array}{r} 23196 \\ 33 \overline{)765489} \\ \underline{-66} \downarrow \downarrow \downarrow \\ 105 \downarrow \\ \underline{-99} \downarrow \\ 64 \downarrow \\ \underline{-33} \downarrow \\ 318 \downarrow \\ \underline{-297} \downarrow \\ 219 \\ \underline{-198} \\ 21 \end{array}$$

9.
$$\begin{array}{r} 45233 \\ 15 \overline{)678500} \\ \underline{-60} \downarrow \downarrow \downarrow \\ 78 \downarrow \\ \underline{-75} \downarrow \\ 35 \downarrow \\ \underline{-30} \downarrow \\ 50 \downarrow \\ \underline{-45} \downarrow \\ 50 \\ \underline{-45} \\ 5 \end{array}$$



G 1. 73300 2. 150000 3. 1510 4. 28000

H. No. of people went to the tour = 25

Total cost of the trip = 2275000

$$\begin{array}{r} \text{Amount that each person has to pay} = \frac{91000}{25) \overline{2275000}} \\ \underline{-225\downarrow} \\ 25 \\ \underline{-25} \\ 0 \end{array}$$

Ans. Each person has to pay ₹ 91000

I. Cost of 1 washing machine = 22835

Cost of 45 washing machine = 22835×45

$$\begin{array}{r} \text{Money left after the purchase} = \begin{array}{r} 1100000 \\ - 1027575 \\ \hline 724225 \end{array} \quad \begin{array}{r} 22835 \\ \times 45 \\ \hline 114175 \\ 913400 \\ \hline 1027575 \end{array} \end{array}$$

Ans. Money left with shopkeeper is ₹ 72425

J Population of city A = 368509

Population of city B = 4857329

Population of city C = 3095864

$$\begin{array}{r} \text{Total population} = \begin{array}{r} 3095864 \\ 4857329 \\ + 368509 \\ \hline 8321702 \end{array} \end{array}$$

Total population of three cities is 8321702.

Practice Time 1.5

- A 1. $67 + 73 = 67 + 3 + 70 = 70 + 70 = 140$
 2. $31 + 42 = 30 + 40 + 1 + 2 = 70 + 3 = 73$
 3. $45 + 85 = 40 + 80 + 5 + 5 = 120 + 10 = 130$
 4. $23 + 27 = 20 + 20 + 7 + 3 = 40 + 10 = 50$
 5. $78 + 32 = 70 + 8 + 2 + 30 = 70 + 30 + 8 + 2 = 100 + 10 = 110$
 6. $21 + 39 = 20 + 30 + 9 + 1 = 50 + 10 = 60$
 7. $76 + 11 = 76 + 10 + 1 = 86 + 1 = 87$
 8. $89 + 32 = 80 + 30 + 9 + 2 = 110 + 11 = 121$

9. $11 + 69 = 10 + 60 + 1 + 9 = 70 + 10 = 80$
10. $82 + 45 = 80 + 40 + 2 + 5 = 120 + 7 = 127$
- B 1. $450 - 11 = 450 - 10 - 1 = 440 - 1 = 439$
2. $478 - 154 = 478 - 4 - 154 = 474 - 154 = 320$
3. $789 - 235 = 789 - 230 - 5 = 559 - 5 = 554$
4. $561 - 541 = 20$
5. $29 - 17 = 29 - 10 - 17 = 19 - 17 = 2$
6. $500 - 112 = 500 - 100 - 12 = 400 - 12 = 388$
7. $56 - 13 = 56 - 10 - 3 = 46 - 3 = 43$
8. $259 - 112 = 259 - 100 - 12 = 159 - 12 = 147$
- C 1. $321 \times 10 = 3210$
2. $56 \times 10000 = 560000$
3. $409 \times 1000 = 409000$
4. $77 \times 100000 = 7700000$
5. $33 \times 40 = 33 \times 4 \times 10 = 1320$
6. $897 \times 100 = 89700$
7. $324 \times 4000 = 324 \times 4 \times 1000 = 1296000$
8. $56 \times 10 = 560$
- D 1. $155 \times (100 + 1) = 15500 + 155 = 15655$
2. $4375 \times 125 = 4375 \times \frac{1000}{8} = \frac{4375000}{8} = 546875$
3. $40000 \div 625 = \frac{40000 \times 8}{625 \times 8} = \frac{320000}{5000} = 64$
4. $3150 \div 25 = \frac{3150 \times 4}{25 \times 4} = \frac{12600}{100} = 126$
5. $\frac{1250 \times 8}{50 \times 8} = \frac{100000}{400} = 250$
6. $624 \times 25 = 624 \times \frac{100}{4} = \frac{62400}{4} = 15600$
7. $\frac{24000 \times 8}{125 \times 8} = \frac{192000}{1000} = 192$

8. $4575 \div 25 = \frac{4575 \times 4}{25 \times 4} = \frac{18300}{100} = 183$
9. $\frac{250625 \times 8}{625 \times 8} = \frac{2005000}{5000} = 401$
10. $678 \times 25 = 678 \times \frac{100}{4} = \frac{67800}{4} = 16950$
11. $567 \times \frac{100}{4} = \frac{56700}{4} = 14175$
12. $432 \times 5 \times 10 = 21600$
13. $251 \times (50 + 2) = 251 \times 50 + 251 \times 2 = 12550 + 502 = 13052$
14. $169 \times (100 + 2) = 16980 + 169 \times 2 = 16900 + 338 = 17238$

Chapter check up

A 1. 1 billion = 1,000,000,000 → International system

$$1,00,00,00,000 = 100 \text{ crores}$$

Ans. (c)

2. 1 million = 1,000,000 → International system

$$10,00,000 \rightarrow \text{Indian system, 10 lakh}$$

Ans. (b)

3. (c) 4. (d)

B 1. $376 - 350 + 235 = 26 + 235 = 261$

Ans. (b)

2. $2314 + 2124 - 1234 = 4438 - 1234 = 3204$

Ans. (b)

3. (b)

4. $(654 \times 23) + 18$

$\begin{array}{r} 654 \\ \times 23 \\ \hline 1962 \\ 13080 \\ \hline 15042 \end{array}$	$\begin{array}{r} 15642 \\ + 18 \\ \hline 15060 \end{array}$
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Ans. (b)

5. $5602 - (140 \div 7)$

$$= 5602 - (20) = 5602 - 20 = 5582$$

Ans. (b)

$$\begin{array}{r}
 6. \quad 4352 \times 124 \\
 \quad \quad 4352 \\
 \quad \quad \times 124 \\
 \quad \quad \hline
 \quad \quad 17408 \\
 \quad \quad 87040 \\
 \quad \quad 435200 \\
 \quad \quad \hline
 \quad \quad 539648
 \end{array}$$

Ans. (a)

C 1. C TL L TH T H T O
 1 0 0 0 7 0 3 5

Ans. 1,00,07,035

2. L TH T H T O
 7 0 0 4 2 8

Ans. 7,00,428

3. M Hh Th T H T O
 8 4 6 0 0 0 9

Ans. 8,460,009

D 1. 435465778, 435554677, 435676543, 435687909, 453467657

2. 112090876, 190800870, 308760980, 409807652,
 498765409

3. 209069785, 398700900, 587409870, 598700060, 598709809

4. 990809099, 990876990, 98998998, 999008091, 999980089

5. 123467890, 123876409, 132845009, 306754109, 45612399

E 1. 119933887, 119384009, 118767890, 118456789,
 111123456

2. 908786596, 340098090, 209087099, 112343567,
 112234223

3. 978989987, 978879898, 978678900, 978678453,
 978096944

4. 223487595, 223425678, 223412311, 223410987,
 223410009

5. 675890123, 560980345, 509009876, 348760981, 102939487

F 1. The distance between two cities = 42 km 875m

$$\begin{array}{r}
 \text{No. of trips in a day} = 6 \qquad 4\ 2\ 8\ 7\ 5 \\
 \qquad \qquad \qquad \qquad \qquad \times\ 1\ 8\ 6 \\
 \text{No. of trips in July} = 31 \times 6 = 186 \qquad 2\ 5\ 7\ 2\ 5\ 0 \\
 \text{Distance covered is 186 trips} = \qquad 3\ 4\ 2\ 9\ 9\ 0\ 0 \\
 \qquad \qquad \qquad \qquad \qquad \qquad \qquad \underline{4\ 2\ 8\ 7\ 5\ 0\ 0\ 0} \\
 \qquad \qquad \qquad \qquad \qquad \qquad \qquad \underline{4\ 7\ 5\ 5\ 8\ 1\ 5\ 0}
 \end{array}$$

2. $8\ 5\ \text{kg}$
 $7\ 9\ \text{kg}$
 $7\ 7\ \text{kg}$
 $\underline{1\ 9\ \text{kg}}$ Person with 12 kg weight cannot go in the elevator.
 $\underline{2\ 6\ 0\ \text{kg}}$

3. Total number of people = 4,90,50,102

No. of men = 1,90,40,102

No. of women = 1,00,37,893

$$\begin{array}{r}
 \text{Total no. of men and women} = \quad 1\ 9\ 0\ 4\ 0\ 1\ 0\ 2 \\
 \qquad \qquad \qquad \qquad \qquad \qquad \qquad +\ 1\ 0\ 0\ 3\ 7\ 8\ 9\ 3 \\
 \qquad \qquad \qquad \qquad \qquad \qquad \qquad \underline{2\ 9\ 0\ 7\ 7\ 9\ 9\ 5}
 \end{array}$$

$$\begin{array}{r}
 \text{No. of children} = \quad 4\ 9\ 0\ 5\ 0\ 1\ 0\ 2 \\
 \qquad \qquad \qquad \qquad \qquad \qquad \qquad -\ 2\ 9\ 0\ 7\ 7\ 9\ 9\ 5 \\
 \qquad \qquad \qquad \qquad \qquad \qquad \qquad \underline{1\ 9\ 9\ 7\ 2\ 1\ 0\ 7}
 \end{array}$$

Ans. There are 1,99,72,107 children.

4. $7\ 8\ 8\ 6\ 0\ 1\ 2\ 3$
 $+ 4\ 5\ 6\ 1\ 2\ 3\ 9\ 0\ 9$
 $\underline{5\ 3\ 4\ 9\ 8\ 4\ 0\ 3\ 2}$

Ans. 53,49,84,032

5. Profit in 2018 = $1\ 2\ 4\ 5\ 6\ 7\ 8\ 0\ 0$
Profit in 2019 = $\underline{-\ 8\ 9\ 7\ 7\ 7\ 5\ 4\ 0}$
 $\underline{3\ 4\ 7\ 9\ 0\ 2\ 6\ 0}$

₹34790260 more profit was made in 2018

Chapter 2

Whole Number

Practice Time 2.1

A 1. $5547 + 2158 + 4342 + 1253$

3. $(46 + 4) + 8 = 46 + (4 + 8) + 5$

$50 + 8 = 46 + (12) + 5$

$58 \neq 63$

LHS = RHS

Ans. False

4. $341 + 21 = 21 + 341$

$362 = 362$

LHS = RHS

Ans. True

5. $16 + 4 = 4 + 16$

$20 = 20$

LHS = RHS

Ans. True

Practice Time 2.2

A 1. $25 - 17 = 8$

$25 - 8 = 17$

2. $134 - 59 = 75$

$134 - 75 = 59$

3. $379 - 278 = 101$

$379 - 101 = 278$

B 1.
$$\begin{array}{r} 10000 \\ - 95673 \\ \hline 04327 \end{array}$$

$$\begin{array}{r} 80093000 \\ - 989996 \\ \hline 79103004 \end{array}$$

Ans. 4327

Ans. 79103004

3.
$$\begin{array}{r} 13407 \\ - 10999 \\ \hline 2408 \end{array}$$

Ans. 2408

C 1. $9538 - \underline{\hspace{2cm}} = 3762$
 $= 9538 - 3762 = 5796$

Ans. 5796

2. $72035 - \underline{\hspace{2cm}} = 30019$
 $= 72035 - 30019 = 42016$

Ans. 42016

3. $8019 - 5784 = 2235$

Ans. 2235

Practice Time 2.3

- A** 1. 5 2. 8 3. 6 4. 5
5. 2 6. 115 7. 6 8. 5

B 1. 47×96

$$= 47 \times (100 - 4) = 47 \times 100 - 47 \times 4 = 4700 - 188 = 4512$$

2. 143×101

$$= 143 \times (100 + 1) = 14300 + 143 \times 1 = 14300 + 143 = 14443$$

3. $266 \times (1021)$

$$= 266 \times (1000 + 20 + 1) = 266 \times 1000 + 266 \times 20 + 266 \times 1 \\ = 266000 + 3320 + 266 = 271586$$

4. 394×997

$$= 394 \times (1000 - 3) = 394 \times 1000 - 394 \times 3 = 394000 - 1182 \\ = 392818$$

5. 451×1003

$$= 451 \times (1000 + 3) = 451000 + 451 \times 3 = 451000 + 1353 \\ = 4523153$$

A 1. 0 2. 0 3. 1

4. $701 - (1869 \div 1869) = 701 - 1$

Ans. 700

5. $(3278 \div 3278) - (5098 \div 5098) = 1 - 1$

Ans. 0

6. $(698 \div 698) - 1 = 1 - 1$

Ans. 0

7. $1000 - (0 \div 315) = 1000 - 0$

Ans. 1000

B Dividend = (Divisor \times quotient) + Remainder

$$= 2544 \times 173 + 60 = 440112 + 60 = 440172$$

Chapter Check-up

A 1. $8769 - 4593 = 4176$

Ans. (a)



2. $8597 - ? = 7429 - 4358$

$$= 8597 - ? = 3071 = 8597 - 3071 = 5526$$

Ans. (b)

3. 5748×999

$$= 5748 \times (1000 - 1) = 5748000 - 5748 = 5742252$$

Ans. (c)

4. 5358×51

$$= 5358 \times (50 + 1) = 5358 \times 50 + 5358 \times 1$$

$$= 267900 + 5358 = 273258$$

Ans. (d)

5. $8 \times 291 \times 125$

$$= (8 \times 125) \times 291 = 1000 \times 291 = 291000$$

Ans. (a)

6. $81265 \times 169 - 81265 \times 69$

$$= 81265 \times (169 - 69) = 81265 \times 100 = 8126500$$

Ans. (c)

7. $3645 + 645 + 45 + 5$

$$= (3645 + 5) + (645 + 45) = 3650 + 690 = 4340$$

Ans. (c)

8. (a) 9. (a) 10. (c)

B 1. $1743 \times 0 = 1743$

Ans. This is false any number multiplied by zero is zero.

2. $(65 \times 131) - (65 \times 31) = 65 \times 100$

$$65 \times (131 - 31) = 65 \times 100$$

$$65 \times 100 = 65 \times 100$$

Ans. True

3. $89 \times 1001 = (89 \times 1000) - (89 \times 1)$

$$= 89 \times (1000 + 1) = (89 \times 1000) - (89 \times 1)$$

$$= (89 \times 1000) + (89 \times 1) = (89 \times 1000) - (89 \times 1)$$

Ans. False

4. $1358 \times 1 = 1358$

Ans. True

5. $38 \times (91 \times 47) = (38 \times 91) \times 47$

Ans. True. Associative Property

6. $653 \times 1 = 6531$

Ans. False

7. $(14 \times 100) - (14 \times 1) = 14 \times (100 - 1)$

Ans. False It should be 14×99

8. $92 \times 15 = 15 \times 92$

Ans. True Commutative Property.

C 1. Commutative Property

2. Commutative Property

3. Zero property

4. Identity Property

D 1. 91×2005

$$= 91 \times (2000 + 5) = (91 \times 2000) + (91 \times 5) = 182000 + 455$$

Ans. 182455

2. 4163×111

$$= 4163 \times (100 + 10 + 1)$$

$$= (4163 \times 100) + (4163 \times 10) + (4163 \times 1)$$

$$= 416300 + 41630 + 4163$$

Ans. 462093

3. 1212×112

$$= 1212 \times (100 + 10 + 2) = 1212 \times 100 + 12120 + 2424$$

Ans. 135744

4. $496 \times 208 = 496 \times (200 + 8) = (496 \times 200) + (496 \times 8)$

$$= 99200 + 3968$$

Ans. 103168

5. 47×51

$$= 47 \times (50 + 1) = (47 \times 50) + (47 \times 1) = 2350 + 47$$

Ans. 2397

6. 63×1998

$$= 63 \times (2000 - 2) = 63 \times 2000 - 63 \times 2 = 126000 - 126$$

Ans. 125874

E 1. $8 \times 14 \times 19 = (8 \times 19) \times 14 = 152 \times 14$

Ans. 2128

2. $10 \times 9 \times 5 = (10 \times 5) \times 9 = 50 \times 9$

Ans. 450

3. $9 \times 15 \times 3 = 9 \times (15 \times 3) = 9 \times 45$

Ans. 405

4. $15 \times 12 \times 8 = (15 \times 8) \times 12 = 120 \times 12$

Ans. 1440

5. $17 \times 19 \times 7 = (17 \times 7) \times 19 = 119 \times 19$

Ans. 2261

6. $8 \times 291 \times 125 = (8 \times 125) \times 291 = 1000 \times 291$

Ans. 291000

Chapter 3

Practice Time 3.1

A 1. $3[24 + 4 + \{8 - (25 \div 5)\}]$

$$= 3[24 + 4 + \{8 - (5)\}] = 3[24 + 4 + \{3\}] = 3[24 + 4 + 3]$$

$$= 3[31] = 93$$

2. $12 + \{5 - (15 \div 3)\}$

$$= 12 + \{5 - (5)\} = 12 + \{5 - 5\} = 12 + \{0\} = 12 + 0 = 12$$

3. $18 \div 3[8 - 3(4 - 2)] + 1$

$$= 18 \div 3[8 - 3(2)] + 1 = 18 \div 3[8 - 6] + 1$$

$$= 18 \div 3[2] + 1 = 6[2] + 1 = 12 + 1 = 13$$

4. $15 + 9 \div 3 - [5 \times 3 - \{5 - (7 - 4)4\}]$

$$= 15 + 9 \div 3 - [5 \times 3 - \{5 - (3)4\}] = 15 + 9 \div 3 - [5 \times 3 - \{5 - 12\}]$$

$$= 15 + 9 \div 3 - [5 \times 3 - \{-7\}] = 15 + 9 \div 3 - [-5 \times 3 - \{-7\}]$$

$$= 15 + 3 - [5 \times 3 + 7] = 18 - (15 \times 7) = 18 - 22 = -4$$

5. $4 + [-9 + \{7 + 3 - 8 - 98\}]$

$$= 4 + [-9 + \{10 - 8 - 98\}] = 4 + [-9 + \{2 - 98\}]$$

$$= 4 + [-9 - 96] = 4 + [-105] = 4 - 105 = 101$$

$$\begin{aligned} 6. \quad & 45 + 3\{34 - 18 + 14\} \div 3\{17 + 3 \times 4 - (2 \times 7)\} \\ & = 45 + 3\{34 - 18 + 14\} \div 3\{17 + 3 \times 4 - (14)\} \\ & = 45 + 3\{34 - 18 + 14\} \div 3\{17 + 12 - 14\} \\ & = 45 + 3\{34 - 18 + 14\} \div 3\{17 - 2\} \\ & = 45 + 3\{34 - 18 + 14\} \div 3\{15\} \\ & = 45 + 3\{16 + 14\} \div 3\{15\} = 45 + 3\{30\} \div 3\{15\} \\ & = 45 + 3\{10\}15 = 45 + 3\{150\} = 45 + \{450\} = 495 \end{aligned}$$

$$\begin{aligned} 7. \quad & 14[-24 \div [-8 + 2] - 3(-7 + 4)] \\ & = 14[-24 \div (-6) - 3(-3)] = 14[4 + 9] = 14 \times 13 = 182 \end{aligned}$$

$$\begin{aligned} 8. \quad & 241 + 18 - (7 \times 12 - 60) \div 8 \\ & = 241 + 18 - (84 - 60) \div 8 = 241 + 18 - 24 \div 8 \\ & = 241 + 18 - 3 = 259 - 3 = 256 \end{aligned}$$

$$\begin{aligned} 9. \quad & 70 + 2 \times 5 + 3 \text{ of } 10 - 60 \div 6 \\ & = 70 + 2 \times 5 + 30 - 60 \div 6 = 70 + 2 \times 5 + 30 - 10 \\ & = 70 + 10 + 30 - 10 \end{aligned}$$

$$\text{Ans. } 110 - 10 = 100$$

$$\begin{aligned} 10. \quad & 5[\{(81 \div 9) \times 12 - 18\} - 6] \\ & = 5[\{(9) \times 12 - 18\} - 6] = 5[(108 - 18) - 6] = 5(90 - 6) \\ & = 5(84) = 420 \end{aligned}$$

$$\begin{aligned} 11. \quad & 42 + 8[\{(63 \div 3) - 12 + 7\} + 6] \\ & = 42 + 8[(21 - 12 + 7) + 6] \\ & = 42 + 8(9 + 7 + 6) = 42 + 8(22) = 42 + 176 = 218 \end{aligned}$$

$$\begin{aligned} 12. \quad & 20 - 2(5 - 4) \times \{3 - (5 - 3)\} \\ & = 20 - 2(1) \times [3 - (+2)] = 20 - 2 \times (3 - 2) = 20 - 2 \times 1 = 18 \end{aligned}$$

$$\text{B } 1. \quad 36 \div (9 - 5)$$

$$2. \quad (12 + 6) \div (6 - 3)$$

$$3. \quad (5 - 3) + 27$$

$$4. \quad 7 \times (17 - 5)$$

$$5. \quad (27 + 8) - 9$$

Practice Time 3.2

$$\text{A } 1. \quad \text{True}$$

$$2. \quad \text{True}$$

$$3. \quad \text{False}$$

$$4. \quad \text{True}$$

$$5. \quad \text{True}$$

B

	2	3	4	5	6	8	9	10	11	12	15	25
796854	✓	✓	✗	✗	✓	✗	✗	✗	✗	✗	✗	✗
78450892	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗
457899	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
31457809	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
58019824	✓	✗	✓	✗	✗	✓	✗	✗	✗	✗	✗	✗
98302917	✗	✓	✗	✗	✗	✗	✓	✗	✗	✗	✗	✗
9087600	✓	✓	✓	✓	✓	✓	✗	✓	✗	✓	✓	✓
64301296	✓	✗	✓	✗	✗	✓	✗	✗	✗	✗	✗	✗
12093213	✗	✓	✗	✗	✗	✗	✗	✗	✓	✗	✗	✗
64312096	✓	✗	✓	✗	✗	✓	✗	✗	✗	✗	✗	✗

- C 1.** 51 **2.** 77 **3.** 2 **4.** 44

Practice Time 3.3

- A 1.** 80

1×80 ; 2×40 ; 4×20 ; 5×16 ; 8×10

1, 2, 4, 5, 8, 10, 16, 20, 40, 80 are factors of 80.

- 2.** 48

1×48 ; 2×24 ; 3×16 ; 4×12 ; 6×8

1, 2, 3, 4, 6, 8, 12, 16, 24 and 48 are factors of 48.

- 3.** 169

1×169 ; 13×13

1, 13 and 169 are factors of 169

- 4.** 18

1×18 ; 2×9 ; 3×6

1, 2, 3, 6, 9 and 18 are factors of 18.

- 5.** 45

1×45 ; 5×9 ; 3×15

1, 3, 5, 9, 15 and 45 are factors of 45.

- 6.** 54

$1 \times 54; 2 \times 27; 3 \times 18; 6 \times 9$

1, 2, 3, 6, 9, 18, 27 and 54 are factors of 54.

7. 36

$1 \times 36; 2 \times 18; 3 \times 12; 4 \times 9; 6 \times 6$

1, 2, 3, 4, 6, 9, 12, 18 and 36 are factors of 36.

8. 39

$1 \times 39; 3 \times 13$

1, 3, 13 and 39 are factors of 39.

9. 256

$1 \times 256; 2 \times 128; 4 \times 64; 8 \times 32$

1, 2, 4, 8, 32, 64, 128, 256 are factors of 256.

10. 75

$1 \times 75; 3 \times 25; 5 \times 15$

1, 3, 5, 13, 25 and 75 are factors of 75.

B 1.

$$\begin{array}{r|l} 2 & 96 \\ \hline 2 & 48 \\ \hline 2 & 24 \\ \hline 2 & 12 \\ \hline 2 & 6 \\ \hline 3 & 3 \\ \hline & 1 \end{array}$$

Prime factors of 96 = $2 \times 2 \times 2 \times 2 \times 2 \times 3$

2.

$$\begin{array}{r|l} 2 & 112 \\ \hline 2 & 56 \\ \hline 2 & 28 \\ \hline 2 & 14 \\ \hline 7 & 7 \\ \hline & 1 \end{array}$$

Prime factors of 112 = $2 \times 2 \times 2 \times 2 \times 7$

3.

$$\begin{array}{r|l} 2 & 120 \\ \hline 2 & 60 \\ \hline 2 & 30 \\ \hline 3 & 15 \\ \hline 5 & 5 \\ \hline & 1 \end{array}$$

Prime factors of 120 = $2 \times 2 \times 2 \times 3 \times 5$

$$\begin{array}{r|l}
 2 & 56 \\
 \hline
 2 & 28 \\
 \hline
 2 & 14 \\
 \hline
 7 & 7 \\
 \hline
 & 1
 \end{array}$$

Prime factors of 56 = $2 \times 2 \times 2 \times 7$

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

Prime factors of 25 = 5×5

$$\begin{array}{r|l}
 2 & 36 \\
 \hline
 2 & 18 \\
 \hline
 3 & 9 \\
 \hline
 3 & 3 \\
 \hline
 & 1
 \end{array}$$

Prime factors of 36 = $2 \times 2 \times 3 \times 3$

$$\begin{array}{r|l}
 2 & 64 \\
 \hline
 2 & 32 \\
 \hline
 2 & 16 \\
 \hline
 2 & 8 \\
 \hline
 2 & 4 \\
 \hline
 2 & 2 \\
 \hline
 & 1
 \end{array}$$

Prime factors of 64 = $2 \times 2 \times 2 \times 2 \times 2 \times 2$

$$\begin{array}{r|l}
 2 & 72 \\
 \hline
 2 & 36 \\
 \hline
 2 & 18 \\
 \hline
 3 & 9 \\
 \hline
 3 & 3 \\
 \hline
 & 1
 \end{array}$$

Prime factors of 72 = $2 \times 2 \times 2 \times 3 \times 3$

$$\begin{array}{r|l}
 2 & 100 \\
 \hline
 2 & 50 \\
 \hline
 5 & 25 \\
 \hline
 5 & 5 \\
 \hline
 & 1
 \end{array}$$

Prime factors of 100 = $2 \times 2 \times 5 \times 5$

- C**
1. 25 → 25, 50, 75, 100, 125
 2. 45 → 45, 90, 135, 180, 225
 3. 125 → 125, 250, 375, 500, 625
 4. 250 → 250, 500, 750, 1000, 1025
 5. 22 → 22, 44, 66, 88, 110

6. $100 \rightarrow 100, 200, 300, 400, 500$
7. $145 \rightarrow 145, 290, 435, 580, 725$
8. $108 \rightarrow 108, 216, 324, 432, 540$
9. $204 \rightarrow 204, 408, 612, 816, 1020$
10. $8 \rightarrow 8, 16, 24, 32, 40$
11. $21 \rightarrow 21, 42, 63, 84, 105$
12. $13 \rightarrow 13, 26, 39, 52, 65$
13. $16 \rightarrow 16, 32, 48, 64, 80$
14. $24 \rightarrow 24, 48, 72, 96, 120$
15. $30 \rightarrow 30, 60, 90, 120, 150$

Practice Time 3.4

A 3. 52 and 81

B 1. Composite **2.** Prime **3.** Composite **4.** Composite
5. Prime **6.** Composite

C 1. $3 + 37$ **2.** $73 + 7$ **3.** $11 + 89$

D 1. $11 + 13 + 7$ **2.** $13 + 17 + 19$
3. $3 + 37 + 31$

Practice Time 3.5

A 1. 85, 136

Factor of 85 $\rightarrow 5 \times 17$

Factors of 136 $\rightarrow 2 \times 2 \times 2 \times 17$

Highest common factor $\rightarrow 17$.

$$\begin{array}{r|l} 5 & 85 \\ \hline 17 & 17 \\ \hline & 1 \end{array}$$

$$\begin{array}{r|l} 2 & 136 \\ \hline 2 & 68 \\ \hline 2 & 34 \\ \hline 17 & 17 \\ \hline & 1 \end{array}$$

2. 22, 44

Factor of 22 $\rightarrow 2 \times 11$

Factor of 44 $\rightarrow 2 \times 2 \times 11$

Highest common factor $= 11 \times 2 = 22$

$$\begin{array}{r|l} 2 & 22 \\ \hline 11 & 11 \\ \hline & 1 \end{array}$$

$$\begin{array}{r|l} 2 & 44 \\ \hline 2 & 22 \\ \hline 11 & 11 \\ \hline & 1 \end{array}$$

3. 12, 16

Factors of 12 $\rightarrow 2 \times 2 \times 3$

Factors of 16 $\rightarrow 2 \times 2 \times 2 \times 2$

Highest common factor $\rightarrow 2 \times 2 = 4$

$$\begin{array}{r|l} 2 & 12 \\ \hline 2 & 6 \\ \hline 3 & 3 \\ \hline & 1 \end{array}$$

$$\begin{array}{r|l} 2 & 16 \\ \hline 2 & 8 \\ \hline 2 & 4 \\ \hline 2 & 2 \\ \hline & 1 \end{array}$$

$$4. \quad \begin{array}{r|l} 2 & 246 \\ \hline 3 & 123 \\ \hline 41 & 41 \\ \hline & 1 \end{array} \quad \begin{array}{r|l} 5 & 135 \\ \hline 3 & 27 \\ \hline 3 & 9 \\ \hline 3 & 3 \\ \hline & 1 \end{array}$$

Factors of 246 $\rightarrow 2 \times 3 \times 41$

Factors of 135 $\rightarrow 5 \times 3 \times 3 \times 3$

Highest common factor = 3

$$5. \quad \begin{array}{r|l} 2 & 46 \\ \hline 23 & 23 \\ \hline & 1 \end{array} \quad \begin{array}{r|l} 2 & 72 \\ \hline 2 & 36 \\ \hline 2 & 18 \\ \hline 3 & 9 \\ \hline 3 & 3 \\ \hline & 1 \end{array}$$

Highest common factor = 21

$$6. \quad 242, 88 \quad \begin{array}{r|l} 2 & 242 \\ \hline 11 & 121 \\ \hline 11 & 11 \\ \hline & 1 \end{array} \quad \begin{array}{r|l} 2 & 88 \\ \hline 2 & 44 \\ \hline 2 & 22 \\ \hline 11 & 11 \\ \hline & 1 \end{array}$$

Factors of 242 $\rightarrow 2 \times 11 \times 11$

Factors of 88 $\rightarrow 2 \times 2 \times 2 \times 11$

Highest common factor $\rightarrow 11 \times 2 = 22$

$$7. \quad 21, 105 \quad \begin{array}{r|l} 3 & 21 \\ \hline 7 & 7 \\ \hline & 1 \end{array} \quad \begin{array}{r|l} 3 & 105 \\ \hline 5 & 35 \\ \hline 7 & 7 \\ \hline & 1 \end{array}$$

Highest common factor = 7

$$8. \quad 50, 25 \quad \begin{array}{r|l} 2 & 50 \\ \hline 5 & 25 \\ \hline 5 & 5 \\ \hline & 1 \end{array} \quad \begin{array}{r|l} 5 & 25 \\ \hline 5 & 5 \\ \hline & 1 \end{array}$$

Factor of 50 = $2 \times 5 \times 5$

Factors of 25 = 5×5

Highest common factors $\rightarrow 5 \times 5 = 25$

$$9. \quad 30, 96 \quad \begin{array}{r|l} 2 & 30 \\ \hline 3 & 15 \\ \hline 5 & 5 \\ \hline & 1 \end{array} \quad \begin{array}{r|l} 2 & 96 \\ \hline 2 & 48 \\ \hline 2 & 24 \\ \hline 2 & 12 \\ \hline 2 & 6 \\ \hline 3 & 3 \\ \hline & 1 \end{array}$$

Factor of 30 $\rightarrow 2 \times 3 \times 5$

Factor of 96, $2 \times 3 \times 2 \times 2 \times 2 \times 2$

Highest common factor $\rightarrow 2 \times 3 = 6$

10. 128, 32

Factors of 128 of 2^7

factor of 32 $\rightarrow 2^5$

Highest common factor $\rightarrow 2^5 = 32$

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

2	32
2	16
2	8
2	4
2	2
	1

B 1. 121, 33, 605

Step 1 $33 \overline{)605} (18$

$$\begin{array}{r} -33 \\ \hline 275 \\ -264 \\ \hline 11 \end{array}$$

Step 2 $11 \overline{)33} (3$

$$\begin{array}{r} -33 \\ \hline 0 \end{array}$$

Step 3 $11 \overline{)121} (11$

$$\begin{array}{r} -121 \\ \hline 0 \end{array}$$

Ans. HCF of 121, 33, 605 is 11

2. 136, 170, 255

$136 \overline{)255} (1$	$119 \overline{)136} (1$	$17 \overline{)119} (7$	$17 \overline{)136} (8$
$\begin{array}{r} -136 \\ \hline 119 \end{array}$	$\begin{array}{r} -119 \\ \hline 17 \end{array}$	$\begin{array}{r} -119 \\ \hline 0 \end{array}$	$\begin{array}{r} -136 \\ \hline 0 \end{array}$

Highest common factor of 136, 170, 255 is 17

3. 70, 140, 420

$70 \overline{)420} (6$	$70 \overline{)140} (2$
$\begin{array}{r} -420 \\ \hline 0 \end{array}$	$\begin{array}{r} -140 \\ \hline 0 \end{array}$

Highest common factor of 420, 140 and 70 is 70

4. 48, 72, 96

$48 \overline{)96} (2$	$48 \overline{)72} (1$
$\begin{array}{r} -96 \\ \hline 0 \end{array}$	$\begin{array}{r} -48 \\ \hline 24 \end{array}$

Highest common factor of 48, 72 and 96 is 24.

C 1. 92, 128

LCM $\rightarrow 2^7 \times 23 = 2944$

2	92
2	46
23	23
	1

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

2. 132, 280

2	132		2	280
2	66		2	140
3	33		2	70
11	11		5	35
1	1		7	7
1	1		1	1

$$\text{LCM } 2^3 \times 5 \times 7 \times 11 \times 3 = 9240$$

3. 72, 90

2	72		2	90
2	36		5	45
2	18		3	9
3	9		3	3
3	3		1	1
1	1		1	1

$$\text{LCM} = 2^3 \times 3^2 \times 5 = 360$$

4. 204, 168

2	204		2	168
2	102		2	84
3	51		2	42
17	17		3	21
1	1		7	7
1	1		1	1

$$\text{LCM} = 2 \times 2 \times 3 \times 2 \times 7 \times 17 = 2^3 \times 3 \times 7 \times 17 = 2856$$

5. 62, 94

2	62		2	94
31	31		47	47
1	1		1	1

$$\text{LCM} = 2 \times 31 \times 47 = 2914$$

6. 85, 102

5	85		2	102
17	17		17	51
1	1		3	3
1	1		1	1

$$\text{LCM} \rightarrow 5 \times 2 \times 3 \times 17 = 510$$

D 1.

2	28, 42, 35, 33
3	14, 21, 35, 33
7	14, 7, 35, 11
2	2, 1, 5, 11
5	1, 1, 5, 11
11	1, 1, 1, 11
	1, 1, 1, 1

LCM = $2 \times 3 \times 7 \times 2 \times 5 \times 11 = 4620$

2.

2	48, 72, 96, 132
2	24, 36, 48, 132
2	12, 18, 24, 66
3	6, 9, 12, 33
2	2, 3, 4, 11
3	1, 3, 2, 11
2	1, 1, 1, 11
11	1, 1, 1, 11
	1, 1, 1, 1

LCM = $2 \times 2 \times 2 \times 2 \times 3 \times 2 \times 11 = 3168$

3.

2	40, 80, 120, 160
2	20, 40, 60, 80
2	10, 20, 30, 40
5	5, 10, 15, 20
2	1, 2, 3, 4
2	1, 1, 3, 2
3	1, 1, 3, 1
	1, 1, 1, 1

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

4.

3	135, 126, 255
3	45, 42, 85
3	15, 14, 85
5	5, 14, 85
2	1, 14, 85
7	1, 7, 85
5	1, 1, 85
17	1, 1, 17
	1, 1, 1

LCM = 32130

$$\begin{array}{r|l}
 5. & 2 \mid 30, 48, 120 \\
 & 2 \mid 15, 24, 60 \\
 & 2 \mid 15, 12, 30 \\
 & 2 \mid 15, 6, 15 \\
 & 3 \mid 15, 3, 15 \\
 & 5 \mid 5, 1, 5 \\
 & \hline
 & 1, 1, 1
 \end{array}$$

$$\text{LCM} = 2 \times 2 \times 2 \times 2 \times 3 \times 5 = 240$$

$$\begin{array}{r|l}
 6. & 2 \mid 72, 108, 144 \\
 & 2 \mid 36, 54, 72 \\
 & 3 \mid 18, 27, 36 \\
 & 3 \mid 6, 9, 12 \\
 & 2 \mid 2, 3, 4 \\
 & 3 \mid 1, 3, 2 \\
 & 2 \mid 1, 1, 2 \\
 & \hline
 & 1, 1, 1
 \end{array}$$

$$\text{LCM} = 2 \times 2 \times 3 \times 3 \times 2 \times 3 \times 2 = 432$$

E. $\text{LCM} \times \text{HCF} = \text{Product of the two numbers}$

$$168 \times 4 = 12 \times \text{other number}$$

$$\frac{168 \times 4}{12} = \text{other number} = 56$$

F $\text{LCM} \times \text{HCF} = \text{Product of the two number}$

$$5 \times 595 = 85 \times \text{other number}$$

$$\frac{5 \times 595}{85} = \text{other numbr}$$

$$35 = \text{other number}$$

G $\text{LCM} \times \text{HCF} = \text{Product of two numbers}$

$$\text{LCM} \times 6 = 24 \times 42$$

$$\text{LCM} = \frac{24 \times 42}{6} = 168$$

H $33 - 3 = 30$ $30 \overline{)165}(5$

$$\begin{array}{r}
 168 - 3 = 165 \quad \begin{array}{r} 150 \\ 15 \overline{)150}(10 \\ 150 \\ \hline 0 \end{array}
 \end{array}$$

Ans. 15

I	3	3, 4, 5, 6, 10, 12
	2	1, 4, 5, 2, 10, 2
	2	1, 2, 5, 1, 5, 1
	5	1, 1, 5, 1, 5, 1
		1, 1, 1, 1, 1, 1

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

$$60 + 2 = 62$$

Ans. 62

J Greatest No - ?

Remainder = 7 and 9

$$1709 - 7 = 1702$$

$$2007 - 9 = 1998$$

$$\text{HCF} = 37 \times 2 = 74$$

2	1702
23	851
37	37
	1

2	1998
3	999
3	333
3	111
37	37
	1

K	3	135	3	126
	3	45	2	42
	3	15	3	21
	5	5	7	7
		1		1

3	60
2	20
2	10
5	5
	1

5	255
17	51
3	3
	1

Factor of 135 = $3 \times 3 \times 3 \times 5$

Factor of 126 = $3 \times 3 \times 2 \times 7$

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

Factor of 255 = $3 \times 17 \times 5$

Highest common factor = 3

5	135, 126, 60, 255
3	27, 126, 12, 51
3	9, 42, 4, 17
3	3, 14, 4, 17
2	1, 14, 4, 17
2	1, 7, 2, 17
7	1, 7, 1, 17
17	1, 1, 1, 17
	1, 1, 1, 1

$$\text{LCM} = 64260$$

Chapter Check up

- A. 1. c 2. b 3. c 4. c
 5. b 6. d 7. d 8. b

- B 1. True 2. False 3. True 4. True
 5. False

C $3064 = 1 \times 3064$

2×1532 ; 4×766 ; 8×383

1, 2, 4, 8, 383, 766, 1532 and 3064 are factor of 3064.

- D 1. 32 2. 12
 3. 27

E 42, 90, 72

Factor of 42 = $2 \times 3 \times 7$

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

Factor of 72 = $2 \times 3 \times 3 \times 2 \times 2$

Highest common factor = $2 \times 3 = 6$

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

$$\begin{array}{r|l} 2 & 90 \\ \hline 3 & 45 \\ \hline 3 & 15 \\ \hline 5 & 5 \\ \hline & 1 \end{array}$$

$$\begin{array}{r|l} 2 & 72 \\ \hline 3 & 36 \\ \hline 3 & 12 \\ \hline 2 & 4 \\ \hline 2 & 2 \\ \hline & 1 \end{array}$$

LCM

$$\begin{array}{r|l} 3 & 42, 90, 72 \\ \hline 2 & 14, 30, 24 \\ \hline 7 & 7, 15, 12 \\ \hline 3 & 1, 15, 12 \\ \hline 2 & 1, 5, 4 \\ \hline 2 & 1, 5, 2 \\ \hline 5 & 1, 5, 1 \\ \hline & 1, 1, 1 \end{array}$$

LCM = $3 \times 2 \times 7 \times 3 \times 2 \times 2 \times 5 = 2520$

F 1. $4 \times (30 \div 6) - 2 + 7$

= $4 \times 5 - 2 + 7 = 20 - 2 + 7 = 18 + 7 = 25$

2. $20 \div (2 \text{ of } 3 + 8 - 4) + 7$

= $20 \div (6 + 8 - 4) + 7 = 20 \div 10 + 7 = 2 + 7 = 9$

3. $(3 \times 12 \times 2) \div 12 = 72 \div 12 = 6$

4. $\{(4 \times 5) - (12 \div 3)\} \times 7 = (20 - 4) \times 7 = 16 \times 7 = 112$

5. $45 + (32 - 12) - 5 = 45 + 20 - 5 = 60 - 5 = 60$

G

$$\begin{array}{r|l} 2 & 14, 28, 91 \\ \hline 7 & 7, 14, 91 \\ \hline 2 & 1, 2, 13 \\ \hline 13 & 1, 1, 13 \\ \hline & 1, 1, 1 \end{array}$$

LCM = $2 \times 2 \times 7 \times 13 = 364$

Required Smallest number = $364 + 1 = 365$

H H.C.F \times L.C.M = Product of two number

= $16 \times 96 = 32 \times \text{other number} = \frac{16 \times 96}{32} = \text{other number}$

48 = other number

I 5400, 6363, 3330

J length = 8 m 25 cm = 825 cm

$$\text{breadth} = 6 \text{ m } 75 \text{ cm} = 675 \text{ cm}$$

$$\text{height} = 4 \text{ m } 50 \text{ cm} = 450 \text{ cm}$$

5	825	3	675	5	450
5	165	5	225	3	90
3	35	5	45	3	30
11	11	3	9	2	10
	1	3	3	5	5
			1		1

Longest tape which can measure the dimensions = $5 \times 5 \times 3 = 750 \text{ m}$.

K	5	15, 25, 30, 45	
	3	3, 5, 6, 9	
	2	1, 5, 2, 3	
	3	1, 5, 1, 3	
	5	1, 5, 1, 1	$5 \times 3 \times 2 \times 3 \times 5 = 450$
		1, 1, 1, 1	$450 - 9 = 441$

Ans. 441 is the required least number.

Chapter 4

Negative number and Integers

Practice Time 4.1

- A**
- | | | | |
|------|-------|------|------|
| 1. < | 2. < | 3. < | 4. > |
| 5. < | 6. < | 7. > | 8. < |
| 9. > | 10. < | | |
- B**
1. -9, -7, -5, 0, 4, 5, 7, 8
 2. -121, -35, -11, 21, 110, 211
 3. -7, -3, 0, 2, 5
 4. -13, -2, -1, 1, 2, 13
 5. -150, -10, -9, 8, 11, 15
 6. -8, -7, 0, 9, 10
- C**
1. 25, 14, 1, -17, -18
 2. 444, 44, 4, -4, -44, -414
 3. 8, 3, 0, -2, -10, -50
 4. 151, 14, 11, 2, -1, -11, -16
 5. 95, 40, 10, 0, -10, -40, -95

- D 1.** -4, 0, 2
2. -30, -10, 20, 30

Practice Time 4.2

- A 1.** 21 **2.** 1491 **3.** 31 **4.** 15
5. 57 **6.** 121 **7.** 72 **8.** 1248

B 1. $|-15 - (14)| = |-15| - |-4| = |-15 + 4| = |15 - 4| = |-11| = 11 = 11$

L.H.S = R.H.S. True

2. $|-3 + 5| = |-3| + |5| = 2 = 3 + 5 = 8$

L.H.S. = R.H.S. False

4. L.H.S. $= |7 + 2| = 9$ R.H.S. $= |7| + |2|$

L.H.S = R.H.S True

4. L.H.S $= |-2 - 3| = |-5| = 5$

R.H.S $= |(-2) + (-3)|; |-2 - 3|; |-5|; 5$

L.H.S = R.H.S True

Practice Time 4.3

A Do it yourself

- B 1.** $(-6) + (-8) = -6 - 8 = -14$
2. $15 - (-15) = 15 + 15 = 30$
3. $(-1) - (+5) = -1 - 5 = -6$
4. $(-4) - (-4) = -4 + 4 = 0$
5. $-6 - (+7) = -6 - 7 = -13$
6. $(-15) - (-12) = -15 + 12 = -3$
7. $(+4) - (-5) = 4 + 5 = 9$
8. $(-25) + (+40) = -25 + 40 = 15$
9. $-8 - (-5) = -8 + 5 = -3$

C 1. $(-45) \times \left(\frac{-1}{9}\right) = -5 \times -1 = +5$

2. $144 \times \left(\frac{-1}{144}\right) = 1 \times -1 = -1$

3. $(-169) \times 72 \times (-17) = 206856$

4. $28 \times (-10) \times (+11) = -3080$

$$5. (-63) \times 22 \times \left(\frac{-2}{10}\right) = 277.2$$

$$6. 12 \times \frac{3}{9} \times -17 = -68$$

$$8. (-9) \times (-7) = 63$$

$$10. 121 \times (-2) = -242$$

$$12. \frac{3}{8} \times \left(\frac{-8}{3}\right) = -1$$

$$D \ 1. \frac{-72}{18} = -4$$

$$3. \frac{108}{-12} = -9$$

$$5. \frac{-15625}{125} = -125$$

$$7. \frac{85}{(-17)} = -5$$

$$9. \frac{-121}{11} = -11$$

$$11. \frac{-5676}{-132} = 43$$

$$E \ 1. -153 \qquad 2. -5$$

$$5. -153 \qquad 6. -11$$

$$9. 169 \qquad 10. 356$$

$$F \ 1. \frac{-6}{4} \times (-2) = 3$$

$$3. 156 \times \frac{-1}{3} = -52$$

$$5. \frac{-266}{5} \times \frac{400}{133} = -160$$

$$7. 168 \times \frac{-5}{12} = -70$$

$$9. \frac{-625}{169} \times \frac{13}{25} = \frac{-25}{13}$$

$$11. 12 \times \frac{-4}{21} = \frac{-16}{7}$$

$$7. (-3) \times +5 = -15$$

$$9. 15 \times (-21) = -315$$

$$11. \left(\frac{-1}{102}\right) \times 6 = \frac{-1}{17}$$

$$2. \frac{696}{-696} = -1$$

$$4. \frac{-47}{47} = -1$$

$$6. \frac{250}{25} = 10$$

$$8. \frac{72}{-3} = -24$$

$$10. \frac{-330}{-1} = 330$$

$$12. 0 \div -154 = 0$$

$$3. 0 \qquad 4. -3$$

$$7. -121 \qquad 8. -10$$

$$11. 13 \qquad 12. -12$$

$$2. -7 \times \frac{1}{21} = \frac{-1}{3}$$

$$4. -175 \times \frac{21}{5} = -735$$

$$6. \frac{125}{3} \times \frac{-99}{133} = \frac{-4125}{133}$$

$$8. 11 \times \frac{-1}{121} = \frac{-1}{11}$$

$$10. \frac{0}{90} \div \frac{10}{21} = 0 \times \frac{21}{10} = 0$$

$$12. -300 \times \frac{-3}{100} = 9$$

Practice Time 4.4

A	Numbers	Base	Index
	9^9	9	9
	1^0	1	0
	10^8	10	8
	3^{11}	3	11
	11^5	11	5
	2^8	2	8
	12^1	12	1
	5^9	5	9
	13^2	13	2
	7^4	7	4

- B**
- $3^2 \times 4^3 = 9 \times 64 = 576$
 - $3 \times 5 \times 10^4 = 15 \times 10^4 = 150000$
 - $2 \times 10^{10} = 20000000000$
 - $13 \times 10^5 = 1300000$
 - $5 \times 10^2 = 500$
 - $2 \times 3 \times 10^7 = 60000000$
 - $7 \times 2^3 = 7 \times 8 = 56$
 - $2^3 \times 3^2 \times 10^5 = 8 \times 9 \times 10^5 = 7200000$

- C**
- | | | | |
|-------------------|--------------------|----------------------|----------------------|
| 1. 10^5 | 2. 6×10^7 | 3. 21×10^6 | 4. 83×10^9 |
| 5. 4^3 or 2^6 | 6. 11^2 | 7. $3^3 \times 10^3$ | 8. $5^3 \times 10^3$ |

Chapter check-up

- A**
- | | | | |
|--------|--------|--------|--------|
| 1. (a) | 2. (a) | 3. (b) | 4. (a) |
| 5. (b) | 6. (a) | 7. (d) | 8. (b) |

- B**
- $-4 + 3 = -1$
 - $8 - (-10) = 8 + 10 = 18$
 - $16 - (-7) = 16 + 7 = 23$
 - $+7 - 8 + 2 - 1 = -1 + 2 - 1 = 0$
 - $-5 + 7 - 8 - 2 - 5 + 7 - 10 = 2 - 10 = -8$

6. $(-8) - (+3) = -8 - 3 = -11$

7. $7 - (-4) = 7 + 4 = 11$

8. $-8 - 7 = -15$

C 1. True 2. True 3. True 4. False

5. False 6. True 7. True 8. b

9. b 10. b 11. b

D 1. Manvi collected = 357 seeds

Mr. Mittal worked has to collect = 600 seeds

Seeds Manu hair to collect now = $600 - 357$ **Ans.** = 243

2. Temperature in early morning = -13°f

Temperature in daytime = 48°f

Rise in temperature = $48 - (-13) = 48 + 13$ **Ans.** = 61°F

3. $2 \times (13 + 9)$; 2×22 **Ans.** 44 km.

4. Temperature of first sample = -18°C

Temperature of second sample = -53°C

Difference = $-53 - (-18) = 53 + 18$ **Ans.** -35°C

5. No. of toffees = 1012; No. of children = 1208

No of toffees to be bought = $1208 - 1012 = 196$

E Do it yourself

Chapter 5

Basic Geometrical Ideas (2D)

A 1. l, m; m,n; l,n; q,r

2. l,p; m,p'; n,p; l,r; m,r; n,r; l,q; m,q; n,q

3. l,p 4. l,r 5. l,q

B 1. Eight, A, B, C, D, E, F, G, H

2. Seven A, B, C, D, E, F, G

C 1. True 2. False 3. False 4. True

Practice Time 5.2

A 1. E, C 2. B 3. F, D

B 1. PR 2. $\angle P$ 3. PQ 4. R

5. QR

C Do it yourself

D 1. $ABCD$ 2. KL 3. P 4. A, B, C, D, N

Practice Time 5.3

A 1. AB, CD 2. GI, CD 3. AO, BO 4. $\overline{CBD}, \overline{BDH}$

B Do it yourself

C 1. Open 2. Open 3. Closed 4. Open
5. Closed 6. Closed 7. Open 8. Closed

Chapter Check-up

A 1. b 2. d 3. b 4. b
5. b

B Chord - BA, PQ, BR ; Radio - BO, OA, OR ; Diameter - BA

C 1. T, P, R 2. T, P, R, X, S
3. X, S, T, P, R, N, M

D 6 angles, $\angle AQD, \angle BQD, \angle CQD, \angle AQC, \angle AQB, \angle BQC$

C 1. Ten: $A, B, C, H, I, F, J, G, E, D$

2. Seven: A, G, F, D, E, C, B

F 1. (iv) 2. (iii) 3. (ii) 4. (i)

G 1. A, O, B 2. $\overline{AB}, \overline{BO}, \overline{AO}$
3. $\angle AOB, \angle OAB, \angle ABO$ 4. $\vec{AB}, \vec{AO}, \vec{BO}$
5. \overleftrightarrow{AB}

H 1. Angle 2. Interior 3. Exterior 4. A, B

Chapter - 6

Understanding Elementary Shapes (2D and 3D)

Practice Time 6.1

A Do it yourself

B Do it yourself

C Do it yourself

D Do it yourself

C 1. False 2. True 3. False 4. True
5. False 6. True 7. True 8. False

Practice Time 6.2

A Do it yourself

B 1. 90° , right angle 2. Straight angle

C Do it yourself

- D**
- | | |
|-------------------------------------|--------------------------------------|
| 1. $90^\circ - 26^\circ = 64^\circ$ | 2. $90^\circ - 42^\circ = 48^\circ$ |
| 3. $90^\circ - 23^\circ = 67^\circ$ | 4. $90^\circ - 57^\circ = 33^\circ$ |
| 5. $90^\circ - 77^\circ = 13^\circ$ | 6. $90^\circ - 45^\circ = 45^\circ$ |
| 7. $90^\circ - 36^\circ = 54^\circ$ | 8. $90^\circ - 89^\circ = 1^\circ$ |
| 9. $90^\circ - 12^\circ = 78^\circ$ | 10. $90^\circ - 79^\circ = 11^\circ$ |
- E**
- | | |
|---------------------------------------|---------------------------------------|
| 1. $180^\circ - 154^\circ = 26^\circ$ | 2. $180^\circ - 165^\circ = 15^\circ$ |
| 3. $180^\circ - 105^\circ = 75^\circ$ | 4. $180^\circ - 26^\circ = 154^\circ$ |
| 5. $180^\circ - 143^\circ = 37^\circ$ | 6. $180^\circ - 46^\circ = 134^\circ$ |
| 7. $180^\circ - 112^\circ = 68^\circ$ | 8. $180^\circ - 178^\circ = 2^\circ$ |
| 9. $180^\circ - 24^\circ = 156^\circ$ | 10. $180^\circ - 96^\circ = 84^\circ$ |

Practice Time 6.3

- A**
- | | | | |
|------|------|------|------|
| 1. b | 2. b | 3. b | 4. b |
| 5. c | | | |
- B**
- Acute Angle - Angle less than 90° is called acute angle.
 - Obtuse angled triangle - If a triangle has at least one angle as an obtuse angle, the triangle is called obtuse triangle.
 - Right Angled triangle - If a triangle has one angle of 90° is called right angled triangle.
 - Triangle : A close figer having three sides and three angles.
 - Isosceles triangle - Triangle whose two sides are equal.
 - Scalene triangle : Triangle whose all sides are different.
 - Equilateral triangle : Triangle which has all sides equal.
- C**
- | | |
|--------------------------|-------------------|
| 1. Right angled triangle | 2. Acute Angled |
| 3. Acute angled | 4. Right angled |
| 5. Right angled | 6. Obtuse angled. |
- D** It is not possible to make a triangle with 40° , 50° and 95° as
 $40 + 50 + 95 = 185^\circ$
Sum of all angles should be 180°
- E** It is right angled triangle as two of its sides are equal.
- F** Equilateral triangle

G 1. Acute Angle

2. $AB = BC = CA$

Practice Time 6.4

A 1. Square : A parallelogram whose all sides are equal and each angle is 90° , is called a square.

2. Rectangle : A parallelogram whose opposite sides are equal and each angle 90° .

3. Rhombus : A parallelogram whose all side are equal.

4. Trapezium : A quadrilateral having atleast one pair of its sides parallel.

5. Parallelogram : A quadrilateral in which the opposite sides are parallel and equal.

B 1. True

2. True

3. False

4. True

C. Similarity - All sides are equal in both.

Difference - In square all angles are of 90° each whereas it is not rhombus

D. Shape that can be compared to rectagle is square.

Similarity - 1. All angles of square and rectangle are of 90° .

2. They have two set of parallel lines.

Difference - In square all the sides are equal whereas in rectangle opposite sides are equal.

E. Do it yourself.

F 1. Rhombus

2. Trapezium

3. Parallelogram

4. Rectangle

5. Square

6. Octagon

G The figure is square.

Properties : its all sides are equal.

All angles are equal which is 90°

Opposite lines are parallel

Practice Time 6.5

A 1. Triangular Prism

2. Cone

Edges : 9

Edge : 1

Facus : 5

Faces : 1

Vertices 6

Vertices : 1

- | | |
|---|---|
| <p>3. Cube</p> <p>Edges = 4</p> <p>Faces = 6</p> <p>Vertices = 4</p> | <p>4. Cuboid</p> <p>Edges = 12</p> <p>Faces = 6</p> <p>Vertices = 8</p> |
| <p>5. Triangular Pyramid</p> <p>Edges = 6</p> <p>Faces = 4</p> <p>Vertices = 4</p> | <p>6. Square based Pyramid</p> <p>Edges = 8</p> <p>Faces = 5</p> <p>Vertices = 5</p> |
| <p>7. Cylinder</p> <p>Edges = 2</p> <p>Faces = 2</p> <p>Vertices = No vertices</p> | |

- B 1.** Cone : Cone is a pyramid that has 1 flat face and one curved surface. It has 1 edge and 1 vertex.
- 2.** Edge: A line segment that is the intersection of two faces.
- 3.** Cylinder : It is like a round pipe that has 1 faces which are circular region and one curved face. It has 2 edges and no vertices.
- 4.** Prism: A prism is a polyhedron whose top and bottom faces are identical polygons, with their corresponding sides parallel.
- 5.** Triangular Prism : It has two equal triangular bases and three faces that are parallelogram.
- 6.** Face : The surface of a solid is called its face.
- 7.** Sphere : Sphere has only 1 face which is curved and no edge and vertex.
- 8.** Pyramid : A 3D shape with a polygon shaped base and triangular faces meeting at one vertex is called a pyramid.
- 9.** Triangular pyramid : It has triangular base and three triangular faces meeting at one vertex.
- 10.** Square pyramid : It has square as the base and four triangular faces meeting at one vertex.

Practice Time 6.6

- 1.** Cylinder **2.** Tetrahedron **3.** Triangular prism

4. Cube 5. Pyramid 6. Rectangle

Chapter Check-up

- A** 1. (b) 2. (d) 3. (c) 4. (b)
 5. (a)
- B** 1. False 2. True 3. True 4. True
 5. True
- C** Do it yourself
- D** Do it yourself

E Name of the shape	Faces	Vertex	Edges	Bases
Cube	6	4	4	8
Cuboid	6	8	12	8
Sphere	1	0	0	2
Cylinder	2	0	2	2
Cone	1	1	1	1

**Chapter 7
Fractions**

- A** 1. $\frac{1}{4}$ 2. $\frac{3}{4}$ 3. $\frac{1}{3}$ 4. $\frac{6}{9}$
 5. $\frac{3}{5}$ 6. $\frac{2}{7}$ 7. $\frac{4}{7}$ 8. $\frac{9}{13}$
 9. $\frac{6}{11}$ 10. $\frac{1}{2}$

B Do it yourself

C 1. $\frac{7}{3} = \begin{array}{r} 3 \overline{) 7} \\ \underline{-6} \\ 1 \end{array}$

Ans. $2\frac{1}{3}$

3. $\frac{7}{6} = \begin{array}{r} 6 \overline{) 7} \\ \underline{-6} \\ 1 \end{array}$

2. $\frac{8}{5} = \begin{array}{r} 5 \overline{) 8} \\ \underline{-5} \\ 3 \end{array}$

Ans. $1\frac{3}{5}$

4. $\frac{11}{7} = \begin{array}{r} 7 \overline{) 11} \\ \underline{-7} \\ 4 \end{array}$

Ans. $1\frac{1}{6}$

5. $\frac{12}{5} \quad 5\overline{)12}(2$
 $\frac{-10}{2}$

Ans. $2\frac{2}{5}$

7. $\frac{9}{2} \quad 2\overline{)9}(4$
 $\frac{-8}{1}$

Ans. $4\frac{1}{2}$

9. $\frac{17}{11} \quad 11\overline{)17}(1$
 $\frac{-11}{6}$

Ans. $1\frac{6}{11}$

D 1. $4\frac{1}{6} = 6 \times 4 + 1 = 24 + 1 = 25$

Ans. $\frac{25}{6}$

2. $\frac{181}{5}$

3. $\frac{53}{15}$

4. $\frac{29}{3}$

5. $\frac{37}{8}$

6. $\frac{12}{5}$

7. $\frac{101}{9}$

8. $\frac{13}{2}$

9. $\frac{182}{15}$

10. $\frac{39}{7}$

Ans. $1\frac{4}{7}$

6. $\frac{39}{4} \quad 4\overline{)39}(9$
 $\frac{-36}{3}$

Ans. $9\frac{3}{4}$

8. $\frac{13}{9} \quad 9\overline{)13}(1$
 $\frac{-9}{4}$

Ans. $1\frac{4}{9}$

10. $\frac{103}{12} \quad 12\overline{)103}(8$
 $\frac{-96}{7}$

Ans. $8\frac{7}{12}$

E

$\frac{8}{11}$	$\frac{3}{4}$	$\frac{2}{11}$	$\frac{6}{11}$	$\frac{5}{11}$	$\frac{5}{9}$
$\frac{6}{7}$	$\frac{5}{14}$	$\frac{3}{14}$	$\frac{5}{9}$	$\frac{9}{14}$	$\frac{1}{14}$
$\frac{6}{19}$	$\frac{18}{19}$	$\frac{7}{11}$	$\frac{11}{19}$	$\frac{4}{8}$	$\frac{4}{19}$

F 1. $\left(\frac{5}{9}, \frac{1}{7}, \left(\frac{2}{9}\right), \frac{5}{17}, \frac{2}{8}, \left(\frac{7}{9}\right)\right)$ 2. $\left(\frac{1}{11}, \frac{5}{19}, \left(\frac{2}{11}\right), \frac{11}{13}, \left(\frac{21}{11}\right), \frac{11}{20}\right)$

3. $\left(\frac{1}{2}, \frac{3}{4}, \left(\frac{5}{2}\right), \frac{2}{7}, \left(\frac{3}{2}\right), \frac{5}{9}\right)$

G 1. VL

2. L

3. VL

4. VL

H 1. $\frac{1 \times 2}{10 \times 2} = \frac{2}{20} = \frac{1 \times 3}{10 \times 3} = \frac{3}{30} = \frac{1}{10} \times \frac{4}{4} = \frac{4}{40}$

2. $\frac{23 \times 2}{31 \times 2} = \frac{46}{62} = \frac{23 \times 3}{31 \times 3} = \frac{69}{93} = \frac{23 \times 4}{31 \times 4} = \frac{92}{124}$

3. $\frac{15 \times 2}{19 \times 2} = \frac{30}{38} = \frac{15}{19} \times \frac{3}{3} = \frac{45}{57} = \frac{15}{19} \times \frac{4}{4} = \frac{60}{76}$

4. $\frac{2 \times 2}{9 \times 2} = \frac{4}{18} = \frac{2}{9} \times \frac{3}{3} = \frac{6}{27} = \frac{2}{9} \times \frac{4}{4} = \frac{8}{36}$

5. $\frac{14}{16} \times \frac{2}{2} = \frac{28}{32} = \frac{14}{16} \times \frac{3}{3} = \frac{42}{48} = \frac{14}{16} \times \frac{4}{4} = \frac{56}{64}$

6. $\frac{2}{5} \times \frac{2}{2} = \frac{4}{10} = \frac{2}{5} \times \frac{3}{3} = \frac{6}{15} = \frac{2}{5} \times \frac{4}{4} = \frac{8}{20}$

7. $\frac{2}{3} \times \frac{2}{2} = \frac{4}{6} = \frac{2}{3} \times \frac{3}{3} = \frac{6}{9} = \frac{2}{3} \times \frac{4}{4} = \frac{8}{12}$

8. $\frac{9}{12} \times \frac{2}{2} = \frac{18}{24} = \frac{9}{12} \times \frac{3}{3} = \frac{27}{36} = \frac{9}{12} \times \frac{4}{4} = \frac{36}{48}$

9. $\frac{4}{5} \times \frac{2}{2} = \frac{8}{10} = \frac{4}{5} \times \frac{3}{3} = \frac{12}{15} = \frac{4}{5} \times \frac{4}{4} = \frac{16}{20}$

10. $\frac{29}{31} \times \frac{2}{2} = \frac{58}{62} = \frac{29}{31} \times \frac{3}{3} = \frac{87}{93} = \frac{29}{31} \times \frac{4}{4} = \frac{116}{124}$

I 1. $\frac{14}{16}, \frac{21}{24}, \frac{28}{32}, \frac{35}{40}, \frac{42}{48}$

2. $\frac{4}{14}, \frac{6}{21}, \frac{8}{28}, \frac{10}{35}, \frac{12}{42}$

3. $\frac{2}{10}, \frac{3}{15}, \frac{4}{20}, \frac{5}{25}, \frac{6}{30}$

4. $\frac{4}{6}, \frac{6}{9}, \frac{8}{12}, \frac{10}{15}, \frac{12}{18}$

5. $\frac{22}{24}, \frac{33}{36}, \frac{44}{48}, \frac{55}{60}, \frac{66}{72}$

6. $\frac{22}{26}, \frac{33}{39}, \frac{44}{52}, \frac{55}{65}, \frac{66}{78}$

7. $\frac{2}{6}, \frac{3}{9}, \frac{4}{12}, \frac{5}{15}, \frac{6}{18}$

8. $\frac{8}{14}, \frac{12}{21}, \frac{16}{28}, \frac{20}{35}, \frac{24}{42}$

$$9. \frac{6}{8}, \frac{9}{12}, \frac{12}{16}, \frac{15}{20}, \frac{18}{24}$$

$$J \quad 1. \frac{4}{9} \times \frac{4}{4} = \frac{16}{36}$$

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

$$5. \frac{4 \times 2}{8 \times 2} = \frac{8}{16}$$

$$7. \frac{3 \times 9}{5 \times 9} = \frac{27}{45}$$

$$K \quad 1. \frac{2}{5} \qquad 2. \frac{7}{11}$$

$$5. \frac{10}{3} \qquad 6. \frac{4}{5} \qquad 7. \frac{70}{5} \qquad 8. \frac{15}{37}$$

$$9. \frac{11}{21} \qquad 10. \frac{20}{81}$$

$$10. \frac{14}{30}, \frac{21}{45}, \frac{28}{60}, \frac{35}{75}, \frac{42}{90}$$

$$2. \frac{1 \times 6}{5 \times 6} = \frac{6}{30}$$

$$4. \frac{2 \times 9}{5 \times 9} = \frac{18}{45}$$

$$6. \frac{7}{9} \times \frac{9}{7} = \frac{49}{63}$$

$$8. \frac{1}{3} \times \frac{10}{10} = \frac{10}{30}$$

Practice Time 7.2

$$A \quad 1. \frac{5}{13} \text{ or } \frac{5}{8}$$

$$\frac{5 \times 8}{13 \times 8} = \frac{40}{104}; \quad \frac{5 \times 8}{8 \times 13} = \frac{40}{104}; \quad \frac{40}{104} < \frac{65}{104}$$

$\frac{5}{13}$ is smaller

$$2. \frac{9 \times 12}{16 \times 12} = \frac{108}{192}; \quad \frac{7 \times 16}{12 \times 16} = \frac{112}{192}$$

$\frac{9}{16}$ is smaller

$$3. \frac{11}{12} \text{ or } \frac{9}{12} \qquad \frac{9}{12} \text{ is smaller}$$

$$4. \frac{7}{10} \text{ or } \frac{5}{8}; \quad \frac{7 \times 8}{10 \times 8} = \frac{56}{80}; \quad \frac{5 \times 10}{8 \times 10} = \frac{50}{80} \qquad \frac{5}{8} \text{ is smaller}$$

5. $\frac{3}{4}$ or $\frac{4}{5}$
 $\frac{3 \times 5}{4 \times 5} = \frac{15}{20}$; $\frac{4 \times 4}{5 \times 4} = \frac{16}{20}$ $\frac{3}{4}$ is smaller

6. $\frac{22 \times 3}{25 \times 3} = \frac{66}{75}$; $\frac{13 \times 5}{15 \times 5} = \frac{65}{75}$ $\frac{13}{15}$ is smaller

7. $\frac{17}{20}$ or $\frac{19}{20}$ $\frac{17}{20}$ is smaller

8. $\frac{3}{8}$ or $\frac{7}{8}$ $\frac{3}{8}$ is smaller

B 1. $\frac{7}{9}$ or $\frac{6}{7}$
 $\frac{7 \times 7}{9 \times 7} = \frac{49}{63}$; $\frac{6 \times 9}{7 \times 9} = \frac{54}{63}$ $\frac{6}{7}$ is larger

2. $\frac{4}{7}$ or $\frac{3}{5}$
 $\frac{4}{7} \times \frac{5}{5} = \frac{20}{35}$; $\frac{3}{5} \times \frac{7}{7} = \frac{21}{35}$ $\frac{3}{5}$ is larger

3. $\frac{3}{7}$ or $\frac{8}{11}$
 $\frac{3 \times 11}{7 \times 11} = \frac{33}{77}$; $\frac{8 \times 7}{11 \times 7} = \frac{56}{77}$ $\frac{8}{11}$ is larger

4. $\frac{14}{29}$ or $\frac{7}{14}$
 $\frac{14 \times 14}{29 \times 14} = \frac{196}{406}$; $\frac{7 \times 29}{14 \times 29} = \frac{203}{406}$ $\frac{7}{14}$ is larger

5. $\frac{15}{49}$ or $\frac{17}{63}$
 $\frac{15 \times 9}{49 \times 9} = \frac{135}{441}$; $\frac{17 \times 7}{63 \times 7} = \frac{119}{441}$ $\frac{15}{49}$ is greater

7	49, 63
7	7, 9
3	1, 9,
3	1, 3
	1, 1

6. $\frac{20}{39}$ or $\frac{30}{91}$
 $\frac{20 \times 7}{39 \times 7} = \frac{140}{273}$; $\frac{30 \times 3}{91 \times 3} = \frac{90}{273}$ $\frac{20}{39}$ is greater

13	39, 91
3	3, 7
7	1, 7
	1, 1

7. $\frac{10}{11}$ or $\frac{11}{19}$

$$\frac{10 \times 19}{11 \times 19} = \frac{190}{209}; \frac{11 \times 11}{19 \times 11} = \frac{121}{209} \quad \frac{10}{11} \text{ is greater}$$

8. $\frac{15}{17}$ or $\frac{11}{12}$

$$\frac{15 \times 12}{17 \times 12} = \frac{180}{204}; \frac{11 \times 17}{12 \times 17} = \frac{181}{204} \quad \frac{11}{12} \text{ is greater}$$

C 1. $\frac{3}{5}, \frac{7}{9}, \frac{1}{2}, \frac{6}{7}$

$$\frac{3}{5} \times \frac{126}{126} = \frac{378}{630}; \frac{7}{9} \times \frac{70}{70} = \frac{490}{630}; \frac{1}{2} \times \frac{315}{315} = \frac{315}{630}; \frac{6}{7} \times \frac{90}{90} = \frac{540}{630}$$

Ans. $\frac{1}{2}, \frac{3}{5}, \frac{7}{9}, \frac{6}{7}$

2. $\frac{17}{8}, \frac{11}{2}, \frac{13}{4}, \frac{5}{6}$

$$\frac{17 \times 5}{8 \times 3} = \frac{51}{24}; \frac{11 \times 12}{2 \times 12} = \frac{132}{24}; \frac{13 \times 6}{4 \times 6} = \frac{78}{24}$$

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

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

Ans. $\frac{5}{6}, \frac{17}{8}, \frac{13}{4}, \frac{11}{2}$

3. $\frac{5}{9}, \frac{4}{7}, \frac{9}{11}, \frac{15}{17}$

$$\frac{5}{9} \times \frac{1309}{1309} = \frac{6545}{11781}; \frac{4}{7} \times \frac{1683}{1683} = \frac{6732}{11781}$$

$$\frac{9}{11} \times \frac{1071}{1071} = \frac{9639}{11781}; \frac{15}{17} \times \frac{693}{893} = \frac{10395}{11781}$$

Ans. $\frac{5}{9}, \frac{4}{7}, \frac{9}{11}, \frac{15}{17}$

4. $\frac{4}{7}, \frac{3}{8}, \frac{5}{14}, \frac{11}{18}$

$$\frac{4 \times 72}{7 \times 72} = \frac{288}{504}; \frac{3 \times 63}{8 \times 63} = \frac{189}{504};$$

7	7, 14, 8, 18
2	1, 2, 8, 18
2	1, 1, 4, 9
2	1, 1, 2, 9
3	1, 1, 1, 9
3	1, 1, 1, 3
	1, 1, 1, 1

$$\frac{5}{14} \times \frac{36}{36} = \frac{180}{504}, \frac{11}{100} \times \frac{28}{28} = \frac{308}{504}$$

Ans. $\frac{5}{14}, \frac{3}{8}, \frac{4}{7}, \frac{11}{18}$

5. $\frac{70}{12}, \frac{3}{10}, \frac{2}{15}, \frac{1}{21}$

$$\frac{7}{12} \times \frac{35}{35} = \frac{245}{420}, \frac{3}{10} \times \frac{42}{42} = \frac{126}{420},$$

$$\frac{2}{15} \times \frac{28}{28} = \frac{56}{420}, \frac{1}{21} \times \frac{20}{20} = \frac{20}{420}$$

Ans. $\frac{1}{21}, \frac{2}{15}, \frac{3}{10}, \frac{7}{12}$

D 1. $\frac{3}{4}, \frac{7}{8}, \frac{9}{11}, \frac{11}{24}$

$$\frac{3}{4} \times \frac{66}{66} = \frac{198}{264}, \frac{7}{8} \times \frac{33}{33} = \frac{231}{264}$$

$$\frac{9}{11} \times \frac{24}{24} = \frac{216}{264}, \frac{11}{24} \times \frac{11}{11} = \frac{121}{264}$$

Ans. $\frac{7}{8}, \frac{9}{11}, \frac{3}{4}, \frac{11}{24}$

2. $\frac{5}{12}, \frac{4}{9}, \frac{5}{8}, \frac{7}{9}$

$$\frac{5}{12} \times \frac{6}{6} = \frac{30}{72}, \frac{4}{9} \times \frac{8}{8} = \frac{32}{72}$$

$$\frac{5}{8} \times \frac{9}{9} = \frac{45}{72}, \frac{7}{9} \times \frac{8}{8} = \frac{56}{72}$$

Ans. $\frac{7}{9}, \frac{5}{8}, \frac{4}{9}, \frac{5}{12}$

3. $\frac{7}{15}, \frac{11}{21}, \frac{1}{7}, \frac{17}{35}$

$$\frac{7}{15} \times \frac{7}{7} = \frac{49}{105}, \frac{11}{21} \times \frac{5}{5} = \frac{55}{105}$$

$$\frac{1}{7} \times \frac{15}{15} = \frac{15}{105}, \frac{17 \times 3}{17 \times 3} = \frac{51}{105}$$

2	12, 10, 15, 21
2	6, 5, 15, 21
3	3, 5, 15, 21
5	1, 5, 5, 7
7	1, 1, 1, 7
	1, 1, 1, 1

4	4, 8, 11, 24
2	1, 2, 11, 6
3	1, 1, 11, 3
11	1, 1, 11, 1
	1, 1, 1, 1

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

3	15, 21, 7, 35
5	5, 7, 7, 35
7	1, 7, 7, 7
	1, 1, 1, 1

Ans. $\frac{11}{21}, \frac{17}{35}, \frac{7}{15}, \frac{1}{7}$

4. $\frac{35}{8}, \frac{23}{4}, \frac{51}{6}, 1$

$$\frac{35}{8} \times \frac{3}{3} = \frac{105}{24}; \frac{23 \times 6}{4 \times 6} = \frac{138}{24}$$

$$\frac{51}{6} \times \frac{4}{4} = \frac{204}{24}; 1 \times \frac{24}{24} = \frac{24}{24}$$

Ans. $\frac{51}{6}, \frac{23}{4}, \frac{105}{8}, 1$

5. $\frac{5}{14}, \frac{4}{7}, \frac{3}{8}, \frac{1}{16}$

$$\frac{5}{14} \times \frac{8}{8} = \frac{40}{112}; \frac{4}{7} \times \frac{16}{16} = \frac{64}{112}$$

$$\frac{3}{8} \times \frac{14}{14} = \frac{42}{112}; \frac{1}{16} \times \frac{7}{7} = \frac{7}{112}$$

$$\frac{4}{7}, \frac{3}{8}, \frac{5}{14}, \frac{1}{16}$$

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

2	14, 7, 8, 16
2	7, 7, 4, 8
2	7, 7, 2, 4
2	7, 7, 1, 2
7	7, 7, 1, 1
	1, 1, 1, 1

Practice Time 7.3

A 1. $\frac{3}{24} - \frac{1}{12} = \frac{3-2}{24} = \frac{1}{24}$

2. $\frac{1}{8} - \frac{5}{48} = \frac{6-5}{48} = \frac{1}{48}$

3. $\frac{3}{5} + \frac{13}{20} = \frac{12+13}{20} = \frac{25}{20} = 1\frac{1}{4}$

4. $\frac{1}{2} - \frac{1}{16} = \frac{8-1}{16} = \frac{7}{16}$

5. $\frac{5}{12} + \frac{7}{16} = \frac{5}{12} \times \frac{4}{4} = \frac{30}{48}$

$$= \frac{7}{16} \times \frac{3}{3} = \frac{21}{48}$$

$$= \frac{30}{48} + \frac{21}{48} = \frac{51}{48}$$

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

6. $\frac{1}{5} - \frac{2}{25} = \frac{5-2}{25} = \frac{3}{25}$

7. $\frac{2}{7} + \frac{4}{7} = \frac{6}{7}$

8. $\frac{1}{5} - \frac{1}{15} = \frac{3-1}{15} = \frac{2}{15}$

9. $\frac{3}{4} + \frac{5}{8} = \frac{6+5}{8} = \frac{11}{8}$

10. $\frac{2}{11} - \frac{1}{33} = \frac{6-1}{33} = \frac{5}{33}$

$$\mathbf{B\ 1.} \quad 4\frac{3}{5} + 2\frac{7}{10}$$

$$\frac{23}{5} + \frac{27}{10} = \frac{46+27}{10} = \frac{73}{10} = 7\frac{3}{10}$$

$$\mathbf{2.} \quad 1\frac{1}{12} + 2\frac{3}{14}$$

$$= \frac{13}{12} + \frac{31}{14}$$

$$= \frac{91+186}{84} = \frac{277}{84} = 3\frac{25}{84}$$

2	12, 14
2	6, 7
3	3, 7
7	1, 7
	1, 1

$$\mathbf{3.} \quad 5\frac{1}{2} - 2\frac{1}{4} = \frac{11}{2} - \frac{9}{4} = \frac{22-9}{4} = \frac{73}{4} = 3\frac{1}{4}$$

$$\mathbf{4.} \quad 3\frac{1}{2} + 7\frac{5}{8} = \frac{7}{2} + \frac{61}{8} = \frac{28+61}{8} = \frac{89}{8} = 11\frac{1}{8}$$

$$\mathbf{5.} \quad 1\frac{1}{3} + 1\frac{1}{9} = \frac{4}{3} + \frac{10}{9} = \frac{12+10}{9} = \frac{22}{9} = 2\frac{4}{9}$$

$$\mathbf{6.} \quad 9\frac{1}{5} + 2\frac{1}{3} = \frac{46}{5} + \frac{7}{3} = \frac{138+35}{15} = \frac{173}{15} = 11\frac{8}{15}$$

$$\mathbf{7.} \quad 1\frac{1}{5} + 2\frac{1}{30} = \frac{6}{5} + \frac{61}{30} = \frac{36+61}{30} = \frac{97}{30} = 3\frac{7}{30}$$

$$\mathbf{8.} \quad 13\frac{2}{7} - 1\frac{1}{35} = \frac{93}{7} - \frac{36}{35} = \frac{465-36}{35} = \frac{429}{35} = 12\frac{9}{35}$$

$$\mathbf{9.} \quad 11\frac{4}{7} - 6\frac{2}{7} = \frac{81}{7} - \frac{44}{7} = \frac{37}{7} = 5\frac{2}{7}$$

$$\mathbf{10.} \quad 2\frac{5}{6} - 1\frac{1}{12} = \frac{17}{6} - \frac{13}{12} = \frac{34-13}{12} = \frac{21}{12} = 1\frac{9}{12}$$

$$\mathbf{C\ 1.} \quad 7 + 5\frac{1}{8} - 3\frac{1}{4} = 7 + \frac{41}{8} - \frac{13}{4} = \frac{56+41-26}{8} = \frac{97-26}{8}$$

$$= \frac{71}{8} = 8\frac{7}{8}$$

$$\mathbf{2.} \quad \frac{1}{20} + \frac{17}{20} + \frac{21}{40} = \frac{18}{20} + \frac{21}{40} = \frac{36+21}{40} = \frac{57}{40} = 1\frac{17}{40}$$

$$\mathbf{3.} \quad 6\frac{1}{3} - 2\frac{4}{5} + 1\frac{7}{15}$$

$$= \frac{19}{3} - \frac{14}{5} + \frac{22}{15} = \frac{95 - 42 + 22}{15} = \frac{53 + 22}{15} = \frac{75}{15} = 5$$

4. $3\frac{5}{12} - 4\frac{4}{9} + 3\frac{1}{3}$

$$= \frac{41}{12} - \frac{40}{9} + \frac{10}{3} = \frac{123 - 160 + 120}{36} = \frac{83}{36} = 2\frac{11}{36}$$

5. $1\frac{9}{20} - 2\frac{7}{15} + 1\frac{2}{3}$

$$= \frac{29}{28} - \frac{37}{15} + \frac{5}{3} = \frac{87 - 148 + 100}{60} = \frac{39}{60} = \frac{13}{20}$$

6. $5\frac{3}{7} + 4\frac{4}{9} + 2\frac{3}{5}$

$$= \frac{38}{7} + \frac{40}{9} + \frac{13}{5} = \frac{1710 + 1400 + 819}{315} = \frac{3929}{315} = 12\frac{149}{315}$$

7. $3\frac{1}{2} - 2\frac{2}{3} + 1\frac{1}{4} = \frac{7}{2} - \frac{8}{3} + \frac{5}{4} = \frac{42 - 32 + 15}{12} = \frac{25}{12} = 2\frac{1}{12}$

8. $2\frac{3}{5} + 1\frac{3}{10} - 3\frac{2}{15} = \frac{13}{5} + \frac{13}{10} - \frac{47}{15} = \frac{78 + 93 - 94}{30} = \frac{23}{30}$

9. $5\frac{1}{2} + 2\frac{1}{3} + 4\frac{1}{5} = \frac{11}{2} + \frac{7}{3} + \frac{21}{5} = \frac{165 + 70 + 126}{30} = \frac{361}{30} = 12\frac{1}{30}$

10. $6\frac{3}{4} - 4\frac{2}{3} + 1\frac{7}{12} = \frac{27}{4} - \frac{14}{3} + \frac{19}{12} = \frac{81 - 56 + 19}{12} = \frac{44}{12} = 3\frac{8}{12}$

or $3\frac{2}{3}$

D $5\frac{1}{2} \text{ m} + 3\frac{5}{11} \text{ m}$

$$= \frac{11}{2} + \frac{39}{11} = \frac{121 + 76}{22} = \frac{197}{22} = \frac{10}{1} - \frac{197}{22}$$

$$= \frac{220 - 197}{22} = \frac{23}{22} = 1\frac{1}{22} \text{ m}$$

Ans. $1\frac{1}{22}$ m rope is left

E $2\frac{1}{4} + 5\frac{2}{3} = \frac{9}{4} + \frac{17}{3} = \frac{27 + 68}{12} = \frac{95}{12} = 7\frac{11}{12}$

Total weight of two large is $7\frac{11}{12}$ kg

$$\mathbf{F} \quad 9\frac{1}{7} - 8\frac{3}{15} = \frac{64}{7} - \frac{123}{15} = \frac{960 - 861}{105} = \frac{99}{105} = \frac{33}{35}$$

He need to stitch $\frac{33}{35}$ m

$$\mathbf{G} \quad \frac{1}{3} + \frac{1}{6} = \frac{2+1}{6} = \frac{3}{6} = \frac{1}{2}$$

Abhijeet spent $\frac{1}{2}$ of an hour.

$$\mathbf{H} \quad \text{Length of ribbon bought by Rita} = 5\frac{1}{3} \text{ cm}$$

$$\text{Length of ribbon bought by Meena} = 8\frac{1}{7} \text{ cm}$$

$$5\frac{1}{3} \text{ cm} = \frac{16}{3} \text{ cm}$$

$$8\frac{1}{7} = \frac{57}{7} \text{ cm}$$

$$\frac{16 \times 7}{3 \times 7} = \frac{112}{21} = \frac{57 \times 3}{7 \times 3} = \frac{171}{21}$$

Meena has longer ribbon

$$\frac{171}{21} = \frac{112}{21} = \frac{59}{21} \text{ cm}$$

Meena has longer ribbon by $\frac{59}{21}$ cm or $2\frac{17}{21}$ cm

$$\text{Total length of the two ribbon} = \frac{117}{21} + \frac{112}{21} = \frac{229}{21} = 13\frac{10}{21} \text{ cm}$$

$$\mathbf{1.} \quad \text{Total distance to be covered} = 10\frac{1}{2} \text{ km}$$

$$\text{Distance to be covered by cycle} = 5\frac{2}{3}$$

$$\text{Distance to be covered by boats} = 1\frac{7}{11}$$

$$\text{Distance to be covered on foret} = 10\frac{1}{2} - \left[5\frac{2}{3} + 1\frac{7}{11} \right]$$

$$\begin{aligned}
 &= \frac{21}{2} - \left[\frac{17}{3} + \frac{18}{11} \right] = \frac{21}{2} - \left[\frac{187 + 54}{33} \right] = \frac{21}{2} - \frac{241}{33} \\
 &= \frac{693 - 241}{66} = \frac{452}{66}
 \end{aligned}$$

J Total weight of sweets = $\frac{1}{2}$ kg

Sweets left after being eaten = $\frac{1}{10}$ kg

Sweets eaten by children = $\frac{1}{2} - \frac{1}{10} = \frac{5-1}{10} = \frac{4}{10} = \frac{2}{5}$ kg

Practice Time 7.4

A 1. $\frac{21}{25} \times \frac{48}{56} = \frac{18}{25}$

2. $\frac{11}{5} \times 4 = \frac{44}{5} = 8\frac{4}{5}$

3. $\frac{15}{20} \times \frac{4}{8} = \frac{3}{8}$

B 1. $\frac{12}{20} \div 4 = \frac{12}{20} \times \frac{1}{4} = \frac{3}{20}$

2. $2\frac{3}{5} \div \frac{10}{15} = \frac{13}{5} \times \frac{15}{10} = \frac{39}{10} = 3\frac{9}{10}$

3. $\frac{6}{8}$ by $\frac{9}{10} = \frac{6}{8} \div \frac{9}{10} = \frac{6}{8} \times \frac{10}{9} = \frac{5}{6}$

Chapter Check-up

A 1. (a)

2. (b)

3. (c)

4. (b)

5. (b)

B 1. $\frac{1}{5}, \frac{2}{4}, \frac{2}{3}, \frac{4}{5}$

2. $\frac{1}{4}, \frac{4}{7}, \frac{3}{5}, \frac{2}{3}$

C 1. $\frac{4}{4}, \frac{7}{12}, \frac{1}{3}, \frac{5}{24}$

2. $\frac{5}{9}, \frac{3}{8}, \frac{1}{3}, \frac{3}{12}$

D 1. $\frac{7}{18} + \frac{5}{12} + \frac{9}{9}$
 $= \frac{42 + 45 + 48}{108} = \frac{135}{108}$
 $= 1\frac{1}{4}$

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

$$2. \quad 1\frac{7}{8} + 4\frac{1}{5} = \frac{15}{8} + \frac{21}{5} = \frac{75+168}{40} = \frac{243}{40} = 6\frac{3}{40}$$

$$\begin{array}{r} \mathbf{E} \quad 1. \quad \frac{14}{16} - \frac{6}{12} \\ = \frac{52-24}{48} = \frac{18}{48} \\ = \frac{3}{8} \end{array} \quad \begin{array}{r} 2 \mid 16, 12 \\ 2 \mid 8, 6 \\ 2 \mid 4, 3 \\ 2 \mid 2, 3 \\ 3 \mid 1, 3 \\ \quad \mid 1, 1 \end{array}$$

$$2. \quad 9\frac{4}{12} - 5\frac{3}{15} = \frac{112}{12} - \frac{78}{15} = \frac{560-312}{60} = \frac{348}{60} = 4\frac{2}{15}$$

$$\begin{array}{r} 2 \mid 12, 15 \\ 3 \mid 6, 15 \\ 2 \mid 2, 5 \\ 5 \mid 1, 5 \\ \quad \mid 1, 1 \end{array}$$

$$\mathbf{F} \quad 7 - 1\frac{3}{4} + \frac{1}{2} = 7 - \frac{7}{4} + \frac{1}{2} = \frac{28-7+2}{4} = \frac{23}{4} = 5\frac{3}{4}$$

$$2. \quad 7\frac{1}{4} + 2\frac{1}{6} - 3\frac{7}{8} = \frac{29}{4} + \frac{13}{6} - \frac{31}{8} = \frac{174+52-93}{24} = \frac{133}{24} = 5\frac{13}{24}$$

$$\begin{array}{r} 2 \mid 4, 6, 8 \\ 2 \mid 2, 3, 4 \\ 2 \mid 1, 3, 2 \\ 3 \mid 1, 3, 1 \\ \quad \mid 1, 1, 1 \end{array}$$

$$\mathbf{G} \quad 1. \quad \frac{1}{2} \text{ of } 2\frac{3}{4} = \frac{1}{2} \times \frac{11}{4} = \frac{11}{8} = 1\frac{3}{8}$$

$$2. \quad \frac{3}{4} \text{ of } 3\frac{2}{6} = \frac{3}{4} \times \frac{20}{6} = \frac{15}{6} = 2\frac{3}{6}$$

$$\mathbf{H} \quad \text{Fraction painted by Poonam} = \frac{7}{10}$$

$$\text{Fraction painted by Sunita} = \frac{1}{5}$$

$$\text{Total} = \frac{7}{10} + \frac{1}{5} = \frac{7+2}{10} = \frac{9}{10}$$

I Fraction of money spent on books = $\frac{1}{2}$

Fraction of money spent on food = $\frac{1}{8}$

Total fraction of money = $\frac{1}{2} + \frac{1}{8} = \frac{8+2}{16} = \frac{10}{16} = \frac{5}{8}$

J Fraction of pages wrote on Sunday = $15\frac{1}{3} = \frac{46}{3}$

Fraction of page wrote on Monday = $17\frac{1}{12} = \frac{205}{12}$

$= \frac{205}{12} - \frac{46}{3} = \frac{205-184}{12} = \frac{21}{12} = 1\frac{9}{12}$

K Hours given for test = $1\frac{1}{2} = \frac{3}{2}$

Hours in which she finished = $1\frac{1}{6} = \frac{7}{6}$

$= \frac{3}{2} - \frac{7}{6} = \frac{9-7}{6} = \frac{2}{6} = \frac{1}{3}$ hours

Chapter 8 Decimals

Practice Time 8.1

A 1. = 2. < 3. < 4. >

5. = 6. >

B 1. ✗ 2. ✓ 3. ✓ 4. ✗

C 1. $276.05 = 200 + 70 + 6 + \frac{5}{100}$

2. $0.459 = \frac{4}{10} + \frac{5}{100} + \frac{9}{1000}$

3. $17.27 = 10 + 7 + \frac{2}{10} + \frac{7}{100}$

4. $71.264 = 70 + 1 + \frac{2}{10} + \frac{6}{100} + \frac{4}{1000}$

D 1. 752.09 2. 5000.007 3. 4.721 4. 15.79

E

	Ten Thou.	Thousa nd	Hund.	Tens	Ones	Decimal Point	Tenths	Hund.	Thous.
15.06				1	5	.	0	6	
0.009					0	.	0	0	9
4375.756		4	3	7	5	.	7	5	6
74.059				7	4	.	0	5	9

Practice Time 8.2

A 1. $21.26 = \frac{2126}{100} = 21\frac{13}{50}$

2. $0.625 = \frac{625}{1000} = \frac{25}{40} = \frac{5}{8}$

3. $100.53 = \frac{10053}{100} = 100\frac{53}{100}$

4. $0.005 = \frac{5}{1000} = \frac{1}{200}$

5. $50.20 = \frac{5020}{1000} = \frac{251}{5}$

6. $145.60 = \frac{14560}{100} = \frac{728}{5} = 145\frac{3}{5}$

7. $1.8 = \frac{18}{10} = \frac{9}{5} = 1\frac{4}{5}$

8. $1.25 = \frac{125}{100} = 1\frac{1}{4}$

B 1. $\frac{37}{1000} = 0.037$

2. $2\frac{7}{100} = 2.07$

3. $\frac{1040}{100} = 10.4$

4. $\frac{3}{100} = 0.03$

5. $\frac{17}{10} = 1.7$

C 1. $\frac{14}{20} = \frac{14}{2 \times 10} = 0.7$

2. $\frac{27}{6} = 4.5$

$$\begin{array}{r} 6 \overline{) 27} \overline{) 4.5} \\ \underline{-24} \\ 30 \\ \underline{-30} \\ 0 \end{array}$$

3. $\frac{41}{500} = \frac{41}{5} \times \frac{1}{100} = \frac{8.2}{100}$
 $= 0.082$

$$\begin{array}{r} 5 \overline{) 41} \overline{) 8.2} \\ \underline{-40} \\ 10 \\ \underline{-10} \\ 0 \end{array}$$

$$4. \quad \frac{3}{4} = 0.75$$

$$\begin{array}{r} 4 \overline{) 30} \text{ (7.5)} \\ \underline{-28} \\ 20 \\ \underline{-20} \\ 0 \end{array}$$

$$5. \quad 15 \frac{5}{12} = \frac{185}{12} = 15.41\overline{6}$$

$$\begin{array}{r} 12 \overline{) 185} \text{ (15.416)} \\ \underline{-180} \\ 50 \\ \underline{-48} \\ 20 \\ \underline{12} \\ 80 \\ \underline{72} \\ 8 \end{array}$$

$$D \quad 1. \quad 125 \frac{1}{10}$$

$$2. \quad 43.800 = \frac{43800}{1000} = \frac{219}{5} = 43 \frac{4}{5}$$

$$3. \quad \frac{2012}{10} = 201 \frac{1}{5}$$

$$4. \quad 0.036 = \frac{36}{1000} = \frac{9}{250}$$

Practice Time 8.3

$$A \quad 1. \quad \begin{array}{r} 2006.54 \\ + 0.46 \\ \hline 2007.00 \end{array}$$

$$2. \quad \begin{array}{r} 7.364 \\ + 732.10 \\ \hline 739.464 \end{array}$$

$$3. \quad \begin{array}{r} 7.16 \\ + 3.14 \\ \hline 10.30 \end{array}$$

$$4. \quad \begin{array}{r} 14.354 \\ + 9.109 \\ \hline 23.463 \end{array}$$

$$5. \quad \begin{array}{r} 601.30 \\ + 108.91 \\ \hline 710.21 \end{array}$$

$$B \quad 1. \quad \begin{array}{r} 34.170 \\ - 32.717 \\ \hline 1.453 \end{array}$$

$$2. \quad \begin{array}{r} 28.674 \\ - 21.260 \\ \hline 7.414 \end{array}$$

$$3. \quad \begin{array}{r} 11.111 \\ - 1.111 \\ \hline 10.000 \end{array}$$

$$4. \quad \begin{array}{r} 7.640 \\ - 3.419 \\ \hline 4.221 \end{array}$$

$$5. \quad \begin{array}{r} 750.05 \\ - 649.98 \\ \hline 100.07 \end{array}$$

C 1. 7 km 576 m

$$= 7 \text{ km} + \frac{576}{1000} \text{ km} = 7 \text{ km} + 0.576 \text{ km} = 7.576 \text{ km}$$

2. 97 kg 245 g

$$= 97 \text{ kg} + \frac{245}{1000} \text{ kg} = 97 \text{ kg} + 0.245 \text{ kg} = 97.245 \text{ kg}$$

3. ₹5 60 paise = ₹ 5 + $\frac{60}{100}$ = ₹ 5.6

D 1.

$$\begin{array}{r} \text{₹} \quad \text{p} \\ 97.50 \\ - 67.75 \\ \hline 29.75 \end{array}$$

Ans. ₹ 29 and 75 paise

2.

$$\begin{array}{r} \text{₹} \quad \text{p} \\ 107.76 \\ - 88.749 \\ \hline 19.011 \end{array}$$

Ans. 19 km and 11 m

3.

$$\begin{array}{r} \text{₹} \quad \text{p} \\ 45.65 \\ - 10.45 \\ \hline 56.10 \end{array}$$

Ans. ₹ 56 and 10 paise

4.

$$\begin{array}{r} \text{₹} \quad \text{p} \\ 27.105 \\ + 106.75 \\ \hline 133.855 \end{array}$$

Ans. 133 km and 855 p

E Distance travelled by train = 512 km 675 m

Total distance travelled = 1000 km

Distance travelled by car = km

Ans. 487 km and 325 m

$$\begin{array}{r} \text{k m} \quad \text{m} \\ 1000.000 \\ - 512.675 \\ \hline 487.325 \end{array}$$

F kg m

$$\begin{array}{r} 100.000 \\ - 67.657 \\ \hline 32.343 \end{array}$$

Ans. 32 kg 343 g should be added to make it 100.

G Total amount sonam has = ₹500

Amount she spends = ₹97 and 50 paise

Money left =

$$\begin{array}{r} \text{₹} \quad \text{p} \\ 500.00 \\ 97.50 \\ \hline 402.50 \end{array}$$

Ans. ₹ 402 and 50 p

$$\begin{array}{r} \text{H} \quad 7.000 \\ - 3.189 \\ \hline 3.811 \end{array}$$

Ans. 3.811

$$\begin{array}{r} \text{I} \quad 3.140 \\ - 1.674 \\ \hline 1.466 \end{array}$$

Ans. 7.534

$$\begin{array}{r} 9.000 \\ - 1.466 \\ \hline 7.534 \end{array}$$

J Difference of 604 and 406.64

$$\begin{array}{r} 604.00 \\ - 406.64 \\ \hline 197.36 \end{array} \quad \begin{array}{r} 604.00 \\ + 406.64 \\ \hline 1010.64 \end{array} \quad \begin{array}{r} 1010.64 \\ - 167.36 \\ \hline 843.28 \end{array}$$

Sum of 604 and 406.64

Ans. 813.28

Chapter Check-up

A 1. (b) **2.** (d) **3.** (b) **4.** (b)

B 1. 2.09 **2.** 0.23 **3.** 0.07 **4.** 1.2

C 1. $15.05 = 10 + 5 + \frac{5}{100}$

2. $21.061 = 20 + 1 + \frac{6}{100} + \frac{1}{1000}$

3. $0.358 = \frac{3}{10} + \frac{5}{100} + \frac{8}{1000}$

D 1. 0.153, 2.65, 6.250, 10.690

2. 7.05, 7.14, 7.17, 7.36, 7.69

E Weight of rice 5 kg 200g

Weight of flour 7 kg 350 g

Weight of pulses 3 kg 750 g

$$\begin{array}{r} \text{Total weight} = \quad 5 \quad 200 \\ \quad \quad \quad 7 \quad 350 \\ \quad \quad \quad 3 \quad 750 \\ \hline 16\text{kg} \quad 300\text{g} \end{array}$$

Ans. 16 kg 300g

F Distance covered by car 7 km 500 m km m

Total Distance 10 km 10 000

Distance she covered walking $\frac{-7}{2}$ $\frac{500}{500}$

Ans. 2 km 500 m

G Cost of pen = ₹67.40 ₹ p
Amount paid = ₹100 100 . 00
Change returned = $\frac{-67}{32}$. $\frac{40}{60}$

Ans. ₹32 and 60 paise

H Weight of sugar packet $0.875 \text{ kg} = 875 \text{ g}$
Sugar used up = 437 g 875
sugar left in the packet = $\frac{-437}{438}$

Ans. 438 g

I Weight of mangoes = 2.650 kg
Weight of pineapples = 1.375 kg
Total weight = $2.650 + 1.375 = 4.025 \text{ kg}$

Chapter 9 Introduction to Algebra

Practice Time 9.1

- A** 1. 13, 16, 19 2. 243, 729, 2187
3. 26, 37, 50 4. 30, 42, 56
- B** 1. (a) multiple of 2 (b) $2n$ (c) 200
2. (a) multiple of 5 (b) $5n$ (c) 500
3. (a) square of n (b) n^2 (c) 10000
4. (a) Add 4 (c) $4n - 3$ (c) 397

C

m	2	13	25	75
n	8	63	123	373

Practice Time 9.2

- A** 1. $2x - 3p$ 2. $3(a + b)$ 3. $2y - 5p$ 4. $p - q$
5. $(25 + y) + t$ 6. $q + p$ 7. $11 + r$ 8. $y - z$
9. $y - 7$ 10. $10a$ 11. $7y + 2x$
- B** 1. $l \times b$ where l = length, b = breadth
2. $D = (d \times q) + r$ where d = divisor D = dividend, q = quotient, r = remainder
3. $b \times h$ where b = base, h = height

4. $2/5 = x$ where $x =$ cost of one pencil
5. $1/2 \times b \times h$ when $b =$ base, $h =$ height
6. $p = 100 \times r$ where $p =$ paise, $r =$ rupees
7. $Sp = Cp + p$ where SP is selling price, $CP =$ cost price, $P =$ Profit
8. $C = p \times d$ where $c =$ circumference, $p =$ variable $d =$ diameter
9. $CP = SP + L$ where, $CP =$ cost price, $SP =$ Selling price and $L =$ Loss

- C 1. Trinomial 2. Binomial 3. Monomial 4. Binomial
5. Trinomial

Practice Time 9.3

- A 1. $-(x \times x \times y \times y)$ 2. $y \times y \times y \times y \times y \times y \times y$
3. $16 \times a \times a \times a \times b \times b$ 4. $\frac{3}{8} \times \frac{3}{8} \times x \times x$
5. $12 \times \frac{1}{4} \times \frac{1}{4} \times \frac{1}{4} \times y \times y \times y$ 6. $p \times p \times q \times q \times r \times r$
7. $\frac{1}{4} \times \frac{1}{4} \times 4 \times 4 \times y \times y$ 8. $p \times p \times p \times q \times q$
9. $\frac{1}{8x} \times \frac{1}{8x} \times \frac{1}{8x} \times \frac{1}{8x} \times \frac{1}{8x}$
10. $\frac{xy}{ab} \times \frac{xy}{ab} \times \frac{xy}{ab} \times \frac{xy}{ab} \times \frac{xy}{ab} \times \frac{xy}{ab} \times \frac{xy}{ab}$
- B 1. $a^3 b^3 c^4$ 2. $360a^3 b^2$ 3. $343x^3 y^3 z^3$ 4. $3pq^3$
5. p^8 6. a^{10}
- C 1. $(wz)^2 = (10 \times 2)^2 = (20)^2 = 400$
2. $a - b + c = 15 - 15 + 5 = 5$
3. $4(t - x) = 4(12 - 4) = 4(8) = 32$
4. $a^3 - b^3 = 7^3 - 3^3 = 343 - 27 = 316$
5. $5(9x - 4y) = 5(9 \times 9 - 4 \times 2) = 5(81 - 8) = 5(73) = 365$
6. $2a + 3b - c = 2 \times 2 + 3 \times 3 - 5 = 4 + 9 - 5 = 13 - 5 = 8$
7. $6 - a = 6 - 5 = 1$
8. $a^3 = (12)^3 = 1728$

$$9. (xy)^2 = (3 \times 2)^2 = (6)^2 = 36$$

$$10. 5mn = 5 \times 4 \times 7 = 140$$

A 1. 1 2. 2 3. 3 4. 2

5. 4

B 1. 2 2. 2 3. 3 4. 2

C 2, 3 and 4 are not polynomials.

D 1. True 2. True 3. False 4. False

5. False

Practice Time 9.5

1. $mn + (-mn) + mn^2 + (-3mn)^2$

$$= mn - mn + mn^2 - 3mn^2 = 0 - 2mn^2 = -2mn^2$$

2. $2y + (-3y) + 4y + y = 2y - 3y + 4y + y = -y + 5y = 4y$

3. $3x^2 + 5x^2 + 9x^2 + 12x^2 = 29x^2$

4. $3b + (-2b) + 2b + (-b) = 3b - 2b - b = 2b$

5. $pqr + 4pqr + 8pqr + (-pqr) = 5pqr + 8pqr - pqr = 12pqr$

6. $4z + (-3z) + 8z + (-2z) = 4z - 3z + 8z - 2z = z + 6z = 7z$

7. $2m + 3m + (-4m) + 5m = 5m - 4m + 5m = 6m$

8. $7n + (-6n) + 9n + (-6n) = 7n - 6n + 9n - 6n = n + 3n = 4n$

9. $3a + 4a + 2a + a = 10a$

B 1. $2z + 4 + 2z^2 + 4z - 2z^2 - 3z$

$$= 2z + 4z - 3z + 2z^2 - 2z^2 + 4 = 3z + 4$$

2. $5a^4 + 8a - 5 + 3a^4 + 4a - 8 + 3a$

$$= 5a^4 + 3a^4 + 8a + 4a + 3a - 5 - 8 = 8a^4 + 15a - 13$$

3. $-2x^3 + 4x - 2 + 3x^3 + 4 + 3 + 3x + x^3$

$$= -2x^3 + 3x^3 + x^3 + 4x + 3x - 2 + 4 + 3 = 2x^3 + 7x + 5$$

4. $a^2 + b^2 + c^2 - 4 + 5a^2 + c^2 - a + 8b^2 - ac^2 + 25$

$$= a^2 + 5a^2 + b^2 + 8b^2 + c^2 + c^2 - ac^2 - 4 - 9 + 25$$

$$= 6a^2 + 9b^2 - 8c^2 + 12$$

5. $6x^2 + 5x - 6 + 3x^2 + 9 + 4 + x^3 - 2x^2 + 4x$

$$= x^3 + 6x^2 + 3x^2 - 2x^2 + 5x + 4x - 6 + 9 + 4$$

$$= x^3 + 7x^2 + 9x + 7$$

$$\begin{aligned}
 6. \quad & -z^3 + 4z - 2 + 7z^3 + 4 + 9z - 8z + 2^3 \\
 & = z^3 + z^3 + 7z^3 + 4z + 9z - 8z - 2 + 4 = 7z^3 + 5z + 2
 \end{aligned}$$

$$\begin{array}{r}
 \text{C 1. } \quad 5x^2 + 8x - 6 \\
 x^2 + 6x + 9 \\
 \hline
 -x^2 + 4x + 2 \\
 \hline
 5x^2 + 18x + 5
 \end{array}$$

$$\begin{array}{r}
 2. \quad 8b^3 - 2b + 8 \\
 -5b^3 - 4b + 7 \\
 \hline
 -b^3 + 9b \\
 \hline
 2b^3 + 3b + 15
 \end{array}$$

$$\begin{array}{r}
 3. \quad x^2 + 6x - 6 \\
 7x^2 + 4x + 9 \\
 \hline
 -3x^2 + 4x - 1 \\
 \hline
 5x^2 + 14x + 2
 \end{array}$$

$$\begin{array}{r}
 4. \quad 7a^4 - 6a - 5 \\
 3a^4 - 4a + 8 \\
 \hline
 +8a \\
 \hline
 10a^4 + 10a + 3
 \end{array}$$

$$\begin{array}{r}
 5. \quad 4x^3 + 6x^2 + 5x - 6 \\
 3x^2 + 4x + 9 \\
 \hline
 -2x^2 \\
 \hline
 4x^3 + 7x^2 + 9x + 3
 \end{array}$$

$$\begin{array}{r}
 6. \quad -z^3 + 4z - 2 \\
 +7z^3 + 9z + 4 \\
 \hline
 +z^3 - 8z \\
 \hline
 7z^3 + 5z + 2
 \end{array}$$

Practice Time 9.6

$$\text{A 1. } 8a^2b^2 - (-a^2b^2) = 8a^2b^2 + a^2b^2 = 9a^2b^2$$

$$\begin{aligned}
 2. \quad & 4a - 8b + ac - (8a + 7b - 3c) \\
 & = 4a - 8b + ac - 8a - 7b + 3c = 4a - 8a - 8b - 7b + 9c + 3c \\
 & \quad -4a - 15b + 12c
 \end{aligned}$$

$$\begin{aligned}
 3. \quad & -8b + ac - (8a + 7b - 3c) \\
 & = -8b + 9c - 8a - 7b + 3c = 8b - 7b + 9c + 3c - 8a \\
 & \quad = -15b + 12c - 8a
 \end{aligned}$$

$$\begin{aligned}
 4. \quad & -7x - 2y - 4z - (x - 4y + 3z) \\
 & = -7x - 2y - 4z - x + 4y - 3z = 7x - x - 2y + 4y - 4z - 3z \\
 & \quad = -8x + 2y - 7z
 \end{aligned}$$

$$5. \quad 4x - 9x = -5x$$

$$6. \quad 4y - (-4y) = 4y + 4y = 8y$$

$$7. \quad 8xy^2 - (-xy^2) = 8xy^2 + xy^2 = 9xy^2$$

$$8. \quad -4ab - (7ab) = 4ab - 7ab = -11ab$$

$$\begin{aligned}
 \text{B 1. } \quad & x^2 + 4x^2y^2 - 3 - y^2 + 9x^2y^2 - 8 + 9y^2 \\
 & = x^2 + 9y^2 - y^2 + 4x^2y^2 + 9x^2y^2 - 3 - 8
 \end{aligned}$$

$$= x^2 + 8y^2 + 13x^2y^2 - 11$$

2. $-2x - 5y + 4x + 8y - 1 - 8y - 3x + 9y - 6$

$$= -2x + 4x - 3x - 5y + 8y - 8y + 9y - 1 - 6 = -x + 4y - 7$$

3. $4x^2 + 8b - 3y + 8 - 2x^2 + 3 - 9b + 8y$

$$= 4x^2 - 2x^2 + 8b - 9b - 3y + 8y + 8 + 3 = 2x^2 - b + 5y + 11$$

4. $3x^2 - 4xy + 3x - 4y - 5xy + 3x - 2x^2 - 8y$

$$= 3x^2 - 2x^2 - 4xy - 5xy + 3x + 3x - 4y - 8y$$

$$= x^2 - 9xy + 6x - 12y$$

C $2x^2y^2 - 4y^2x^2 + 6xy - 3 + (-x^2y^2 + 8y^2x^2 - 2xy + 9)$

$$2x^2y^2 - x^2y^2 - 4y^2x^2 + 8y^2x^2 + 6xy - 2xy - 3 + 9$$

$$x^2y^2 + 4y^2x^2 + 4xy + 6$$

$$x^2y^2 + 4y^2x^2 + 4xy + 6 - (-11x^2y^2 + 10y^2x^2 - 12xy - 4)$$

$$x^2y^2 + 4y^2x^2 + 4xy + 6 + 11x^2y^2 - 10y^2x^2 + 12xy + 4$$

$$12x^2y^2 - 6y^2x^2 + 16xy + 10$$

D $-8 + 9x^2 - 4y^2 + 3xy + 7xy - 3x^2 - 9y^2 + 3$

$$9x^2 - 3x^2 - 4y^2 - 9y^2 + 3xy + 7xy - 8 + 3$$

$$6x^2 - 13y^2 + 10xy - 5$$

$$6x^2 - 13y^2 + 10xy - 5 - (11x^2 + 9y^2 - 5xy)$$

$$6x^2 - 13y^2 + 10xy - 5 - 11x^2 - 9y^2 + 5xy$$

$$6x^2 - 11x^2 - 13y^2 - 9y^2 + 10xy + 5xy - 5$$

$$-5x^2 - 22y^2 + 15xy - 5$$

E $-8 + 9x^2 - 4y^2 + 3xy + 7yx - 3x^2 - 9y^2 + 3$

$$9x^2 - 3x^2 + 3xy + 7yx - 9y^2 - 4y^2 - 4y^2 + 3 - 8$$

$$6x^2 + 10xy - 13y^2 - 5$$

$$6x^2 + 10xy - 13y^2 - 5 - (11x^2 - 2 + 9y^2 - 5xy)$$

$$6x^2 + 10xy - 13y^2 - 5 - 11x^2 + 2 - 9y^2 + 5xy$$

$$6x^2 - 11x^2 - 13y^2 - 9y^2 + 10xy + 5xy - 5 + 2$$

$$-5x^2 - 22y^2 + 15xy - 3$$

F $10ab - 6ac + 8bc + 3cd + 6ac - 6ab + 5bc + cd$

$$10ab - 6ab - 6ac + 6ac + 8bc + 5bc + 3cd - cd$$

$$4ab + 13bc + 2cd$$

$$4ab + 13bc + 2cd - (9ab - 6ac - 6bc - 2cd)$$

$$4ab + 13bc + 2cd - 9ab + 6ac + 6bc + 2cd$$

$$-5ab + 19bc + 6ac + 4cd$$

Chapter Check-up

- A** 1. (a) 2. (d) 3. (b) 4. (d)
5. (c)

B 1. $9xy - 9xy + 3xy - 3xy = 0$

2. $4p + pq + 7q + 8q = 4p + 7p + 9q + 8q = 11p + 17q$

3. $4x + 5x = 9x$

4. $2x^3 - 3x^3 + 4x^3 = 3x^3$

C 1. $14x + 9y + 3z$ 2. $-13ab - 6cd - 13xy$

D 1. $x^2 + 4x - 3z + 9x^2 + 7x + 8z - x + 7 - z$

$$x^2 + 9x^2 + 4x + 7x - x - 3z + 8z - z + 7$$

$$10x^2 + 10x + 4z + 7$$

2. $9a + 7ab + 2b - 9a + 7ab + 2b - a + ab - 2b$

$$9a - 9a - a + 7ab + 7ab + ab + 2b + 2b - 2b$$

$$-a + 15ab + 2b$$

3. $3 + x - x^2 + 4x^3 + 8 + 4x - 4x^2 + 7x^3 + 7 + 6x^2 - x^3$

$$x + 4x - x^2 - 4x^2 + 6x^2 + 4x^3 + 7x^3 - x^3 + 3 + 7 + 8$$

$$5x + x^2 + 10x^3 + 18 = 10x^3 + x^2 + 5x + 18$$

E 1. $3x - 9x = -6x$

2. $7 - ab - (20 - ab) = 7 - ab - 20 + ab = -13$

3. $9y - 8a$

4. $3a^2 + 7b^2 - a^2 + b^2 = 3a^2 - a^2 - 7b^2 + b^2 = 2a^2 + 6b^2$

5. $6y^2 - (-3x) = 6y^2 + 3x$

F 1. $4x^2y - 7xy - 9$

$$-5x^2y + 11xy + 2$$

$$+$$

$$\hline 9x^2y - 18xy - 11$$

$$\begin{array}{r}
 2. \quad -9a^2 - 3b^2 + 8ab \\
 -2a^2 + 7b^2 - ab^2 \\
 \hline
 -11a^2 - 10b^2 + 9ab^2
 \end{array}$$

$$\begin{array}{r}
 3. \quad 8a - 4b - 6c \\
 +5a + 7b + 9c \\
 \hline
 3a - 11b - 15c
 \end{array}$$

- G 1.** $(9a + 3b + 4a + 5ab - 4a + 2b) - (7ab + 2b - a)$
 $14ab + 5b - 7ab - 2b + a$
 $7ab + 3b + a$
- 2.** $(2st + s^2 + t^2 + 5st - 2s^2 - 2t^2) - (5st + 3s^2 + 3t^2)$
 $7st - s^2 - t^2 - 5st - 3s^2 - 3t^2$
 $2st - 4s^2 - 4t^2$
- 3.** $(8ab + 5b + 3a - 3a + 6b - 6ab) - (2ab - a - b)$
 $2ab + 11b - 2ab + a + b$
 $a + 12b$
- 4.** $(10p^2 + 10pq - 2p^2 - 3q^3 + 2pq) - (3p^2 + 3q^2 + 10pq)$
 $8p^2 + 12pq - 3q^2 - 3p^2 - 3q^2 - 10pq$
 $5p^2 - 2pq - 6q^2$
- 5.** $(x^2 + y^2 + 9 - 4x^2y^2) - (8x^2 - 3y^2 - 2x^2y^2)$
 $x^2 + y^2 + 9 - 4x^2y^2 - 8x^2 + 3y^2 + 2x^2y^2$
 $-7x^2 + 4y^2 - 2x^2y^2 + 9$
- 6.** $(9ab + 3bc - 7ac - 4ab - 3ac + 6bc) - (ab + bc - ac)$
 $9ab + 3bc - 7ac - 4ab - 3ac + 6bc + ab - bc + ac$
 $5ab + 9bc - 10ac + ab - bc + ac$
 $6ab - 8bc - 9ac$
- 7.** $2xy + 5y - 3x + 5xy - 5y + 3x - (8y - 10xy + 2x)$
 $7xy - 8y + 10xy - 2x$
 $17xy - 8y - 2x$

Chapter - 10 Ratio and Proportion

Practice Time 10.1

A 1. $\frac{85}{255} = \frac{1}{3} = 1:3$

2. $\frac{154}{40} = \frac{3}{8} = 3:8$

3. $\frac{28}{35} = \frac{4}{5} = 4:5$

4. $\frac{42}{35} = \frac{6}{5} = 6:5$

B 1. 36 minutes to 2 hours

1 hour = 60 minutes

2 hours = $2 \times 60 = 120$ minutes = $\frac{36}{120} = \frac{3}{10} = 3:10$

2. 10 mm to 1 cm; 1 cm = 10 mm = $\frac{10}{10} = 1 = 1 : 1$

3. 2 metre to 50 cm; 1 m = 100 cm

2 m = 200 cm = $\frac{200}{50} = \frac{4}{1} = 4:1$

4. 1 year to 7 months; 1 year = 12 months = $\frac{12}{7} = 12 : 7$

5. 32 g to 1 kg; 1 kg = 1000 g = $\frac{32}{1000} = \frac{4}{125} = 4 : 125$

C $3 + 4 = 7$

Priyanka got = $\frac{3}{7} \times 700 = 300$

Komal got = $\frac{4}{7} \times 700 = 400$

Ans. 300, 400

D $2 + 3 = 5 = \frac{2}{5} \times 120 = 48 = \frac{3}{5} \times 120 = 72$

Ans. 48, 72

E

S.No.	Fraction	Ratio	Read as	Simplest form
1.	$\frac{3}{5}$	3 : 5	3 is to 5	3 : 5
2.	$\frac{50}{300}$	50 : 300	50 is to 300	1 : 6
3.	$\frac{50}{20}$	50 : 20	50 is to 20	5 : 2

4.	$\frac{10}{5}$	10 : 5	10 is to 5	2 : 1
5.	$\frac{500}{1}$	500 : 1	500 is to 1	500 : 1
6.	$\frac{120}{200}$	120 : 200	120 is to 200	3 : 5
7.	$\frac{160}{100}$	160 : 100	160 is to 100	8 : 5
8.	$\frac{20}{3}$	20 : 3	20 is to 3	20 : 3
9.	$\frac{8}{24}$	8 : 24	8 is to 24	1 : 3

Practice Time 10.2

A 1. $8 : 14 :: 20 : 36$

$$= \frac{8}{14} = \frac{4}{7} = \frac{20}{36} = \frac{5}{9} \quad 4:7 \neq 5:9$$

No, they are not in proportion.

2. $7 : 3 :: 63 : 27$

$$= \frac{7}{3} = \frac{63}{27} = \frac{21}{9} \quad 7 : 3 = 7 : 3$$

Yes, they are in proportion.

3. $60 : 50 :: 180 : 150$

$$= \frac{60}{50} = \frac{6}{5} = \frac{180}{150} = \frac{6}{5} \quad \text{Yes, they are in proportion}$$

4. $20 : 80 :: 4 : 16$

$$\frac{20}{80} = \frac{1}{4} = \frac{4}{16} = \frac{1}{4} \quad \text{Yes, they are in proportion}$$

B $15 : 45 :: 40 : 120$

$$= \frac{15}{45} = \frac{40}{120} \quad 1 : 3 = 1 : 3 \quad \text{Yes, they are in proportion}$$

C Cost of 40 m cloth = ₹ 200

$$\text{Cost of 1 m cloth} = \frac{200}{40} = ₹ 5$$

Ans. Cost of 50 m cloth is = $50 \times 5 = ₹ 250$

D Cost of 24 bananas = ₹48

$$\text{Cost of 1 bananas} = \frac{48}{24} = ₹2$$

$$\text{Cost of 6 bananas} = 6 \times 2 = ₹12$$

E No. of days taken by 4 people = 6

$$\text{No. of days taken by 1 person} = \frac{6}{4}$$

$$\text{No. of days taken by 12 people} = \frac{3}{2} \times 12 \Rightarrow 18$$

Ans. 12 people will take 18 days to finish the job.

Chapter Check-up

A 1. b 2. c 3. b 4. a

B 1. $55 : 15 = \frac{55}{15} = \frac{11}{3}$ Ans. 11 : 3

2. $36 : 50 = \frac{36}{50} = \frac{18}{25}$ Ans. 18 : 25

3. $8 : 48 = \frac{8}{48} = \frac{1}{6}$ Ans. 1 : 6

4. $\frac{34}{51} = \frac{2}{3} = 2 : 3$

C 1. 1 years = 12 month

$$2 \text{ year} = 24 \text{ month}$$

$$\frac{24}{8} = \frac{3}{1} \qquad \text{Ans. 3 : 1}$$

2. 6 kg to 500g

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

$$6 \text{ kg} = 6000 \text{ g}$$

$$\frac{6000}{500} = \frac{12}{1} \qquad \text{Ans. 12 : 1}$$

3. ₹1 = 100p; ₹5 = 500p

$$\frac{50}{70} \qquad \text{Ans. 50 : 7}$$

4. 3 dozens to 5 gross

1 gross = 12 dozen

$$5 \text{ gross} = 12 \times 5 = 60 \text{ dozen} = \frac{3}{60} = \frac{1}{20}$$

Ans. 1 : 20

D Distance covered by Harish by a steamer = 60 km

Distance covered by a boat = 28 km

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

Ans. 15 : 7

E Let the two numbers by $4x$ and $5x$

$$4x + 5x = 45$$

$$9x = 45$$

$$x = \frac{45}{9}$$

Ans. First number = $4 \times 5 = 20$

Second number = $5 \times 5 = 25$

F Cost of 15 books = ₹ 300.75

$$\text{Cost of 1 book} = \frac{300.75}{15}$$

$$\text{Cost of 20 books} = \frac{300.75 \times 20}{15 \times 100}$$

Ans. Cost of 20 books is ₹ 401

G Cost of 38 kg rice = ₹ 275.50

$$\text{Cost of 1 kg rice} = \frac{275.50}{38}$$

$$\text{Cost of 20 kg rice} = \frac{275.50 \times 20}{38 \times 100} = \frac{2755}{19} = ₹ 145$$

Ans. Cost of 20 kg rice is ₹ 145.

H Cost of 26 chocolates is ₹ 546

$$\text{Cost of 1 chocolate} = ₹ \frac{546}{26}$$

$$\text{Cost of 50 chocolates} = \frac{546 \times 50}{26} = ₹ 1050$$

Ans. Cost of 50 chocolates is ₹1050

I Weight of 45 folding chairs = 20 kg

$$\text{Chairs that can be loaded} = \frac{45}{20} \times 5000 = 11250$$

Ans. 11250 chairs can be loaded in the truck

Chapter 11 Perimeter and Area

Practice Time 11.1

A 1. Perimeter of square = $4 \times 15 = 60$ cm

B. Breadth of rectangle = 6 cm

$$\text{Perimeter of rectangle} = 18 \text{ cm} = 2(l + b)$$

$$= 2l + 2b = 2 \times l + 2 \times b$$

$$18 = 2l + 12$$

$$18 - 12 = 2l$$

$$6 = 2l$$

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

$$l = 3 \text{ cm}$$

C Perimeter of rectangle = $2(l + b) = 2(7 + 4) = 2(11) = 22$ cm

D Perimeter of triangle = Sum of all sides

$$38 = 12 + 15 + x; \quad 38 = 27 + x; \quad 38 - 27 = x; \quad 11 = x$$

Length of third side will be 11cm

E 1. $1 + 2 + 3 + 2 + 1 + 2.5$

And. 11.5 cm

$$2. \quad 2 + 8 + 2 + 2 + 2.5 + 2 + 3 + 1.5 + 1.5 + 3 + 2.5 + 2 + 2 + 2 = 36 \text{ cm}$$

F Perimeter of rectangle = $2(l + b)$

$$300 = 2(100 + b); \quad 300 = 200 + 2b; \quad 300 - 200 = 2b; \quad 100 = 2b$$

$$\frac{100}{2} = b; \quad b = 50 \text{ m}$$

G Perimeter of rectangle = $2(l + b) = 2(175 + 150) = 2(325) = 650$

$$\text{Cost} = 650 \times 12 = ₹7800$$

Ans. Cost of fencing rectangular park is ₹7800

Practice Time 11.2

1. Area of rectangle = $l \times b = 125 \times 80 = 1000 \text{ m}^2$
2. Perimeter of square = $4 \times \text{side} = 4 \times 15 = 60 \text{ cm}$
3. Area = Side \times side
 $144 = x \times x$; $144 = x^2$; $12 = x$
Perimeter = $4 \times \text{side} = 4 \times 12 = 48 \text{ cm}$
4. Perimeter of rectangle = $2(l + b) = 2(150 + 120) = 2(270) = 540 \text{ m}$
Cost of fencing 2 m = ₹3
Cost of fencing 540 m = $\frac{3}{2} \times 540 = ₹810$
5. Cost of white washing 1 m^2 wall = $\frac{9120}{5}$
Area = 1824 m^2 ; Area = $l \times b$; $1184 = l \times 16$; $\frac{1184}{16} = l$
74 m = length
Ans. length = 74 m, Area = 1824 m^2
6. Let the breadth be x Thus, length = $2x$
Perimeter = $2(l + b)$
 $162 = 2(x + 2x)$; $\frac{162}{2} = 3x$; $x = 27 \text{ m}$
Ans. Breadth = 27 m
length = $2 \times 27 = 54 \text{ m}$
Area = $27 \text{ m} \times 54 \text{ m} = 1458 \text{ m}^2$
7. Length = $3x$ Breadth = $2x = 120$
 $x = 60 \text{ m}$
Length = $3 \times 60 = 180 \text{ m}$
Perimeter = $2(180 + 120) = 2 \times 300 = 600 \text{ m}$

Chapter Check-up

- A 1. (d) 2. (c) 3. (d)
B Area of rectangle = $l \times b = 8 \times 2.5 = 20 \text{ cm}^2$
C Area of rectangle = $l \times b$
 $21 = l \times 3$; $\frac{21}{3} = l = 7 \text{ cm}$

D Area of square = side \times side

$$25 \text{ cm}^2 = x \times x; 5 \text{ cm} = x$$

Ans. Side of square is 5 cm

E Area = side \times side

$$144 = (\text{side})^2; 12 = \text{side}; \text{Perimeter} = 4 \times \text{side} = 12 \times 4$$

Ans. = 48 cm

F If breadth is x ; Length is $2x$; Area = $x \times 2x$

$$200 = 32x^2; 100 = x^2; x = 10$$

Breadth = 10; length = $2 \times 10 = 20$ cm;

$$\text{Perimeter} = 2(10 + 20) = 2(30) = 60 \text{ cm}$$

G Do it yourself

H Perimeter of rectangular plot = $2(l + b)$

$$= 2(240 + 200) = 2(440) = 880$$

Cost of fencing 1 metre = ₹30

$$\text{Cost of fencing 880 m} = 30 \times 880 = 26400$$

Chapter 12 Symmetry

A Do it yourself

B Do it yourself

C 1. 1

2. 5

3. 4

4. 4

D 1, 6, 7, 10

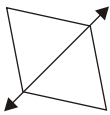
E Do it yourself

F Do it yourself

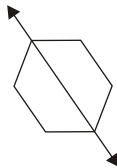
Practice Time 12.2

A Do it yourself

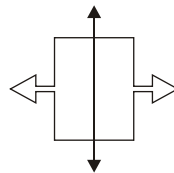
B 1.



2.



3.



Practice time 12.3

A Do it yourself

B Do it yourself

C 1. 2

2. 1

3. 1

4. 5

D S, N, Z

Practice Time 12.4

A Do it yourself

B 1. 0, 1, 3, 8

2. Yes, right side

Chapter Check-up

A 1. a 2. b 3. b 4. a

5. b 6. a

B 1. Diamond 2. one 3. line of symmetry

4. mirror reflection 5. 6

C Do it yourself

Chapter 13

Practice Time 13.1

13.1 Do it yourself

13.2 Do it yourself

13.3 Do it yourself

Chapter Check-up

A 1. b 2. b 3. a 4. b

B 1. False 2. True 3. True 4. True

5. True 6. False

C Do it yourself

D Do it yourself

C Do it yourself

E Do it yourself

F Do it yourself

G Do it yourself

Chapter 14
Data Handling

Practice Time 14.1

Group	Tally Marks	Number of Students
50-59		7
60-69		6
70-79		2
80-89		4
90-100		4

Practice Time 14.2

- A Do it yourself
B Do it yourself
C Do it yourself
D Do it yourself
E 1. 920 2. 280 3. Santosh
4. Sheela and Sally 5. 40

Practice Time 14.3

- A 1. Komal 2. 33 3. 5 4. Komal
5. 138
B Do it yourself C Do it yourself
D 1. January 2. 10 cm 3. 60 cm
4. January to March
E 1. $16 + 8 + 10 + 14 = 48$ 2. Water Park (16 students)
3. Sea sides (14 students) 4. 16 students

Chapter Check-up

- A 1. 15 2. Blue
B Do it yourself C Do it yourself
D 1. 60 2. 2018 3. 30 4. 440
E Do it yourself F Do it yourself
G 1. 18000 2. 14000 3. 2015 and 2014

Model Test Paper - 1

- A 1. (b) 2. (a) 3. (c) 4. (c)
5. (d) 6. (b)
B 1. 2, 3 and 5 are meaningless
2. VCX, greater values should not follow lesser values
3. ILD, greater values should not follow lesser values
4. XVV, writing VV is not correct way.
C 1. $450 - 10 - 1 = 440 - 1 = 439$
2. $478 - 154 = 478 - 4 - 154 = 474 - 154 = 320$
3. $789 - 235 = 789 - 230 - 5 = 559 - 5 = 554$

4. $561 - 541 = 20$
5. $29 - 17 = 29 - 10 - 7 = 19 - 7 = 12$
6. $500 - 112 = 500 - 100 - 12 = 400 - 12 = 388$
7. $56 - 13 = 56 - 10 - 3 = 46 - 3 = 43$
8. $259 - 112 = 259 - 100 - 10 - 2 = 249 - 10 - 2 = 239 - 2 = 237$

$\begin{array}{r} 100000 \\ -95673 \\ \hline 04327 \end{array}$	$\begin{array}{r} 80093000 \\ -989996 \\ \hline 79103004 \end{array}$	$\begin{array}{r} 13407 \\ -10999 \\ \hline 2408 \end{array}$
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- E 1. 91×2005
 $= 91 \times (2000 + 5) = 91 \times 2000 + 91 \times 5$
 $= 182000 + 455 = 182455$
2. 4163×111
 $= 4163 \times (100 + 10 + 1) = 4163 \times 100 + 4163 \times 10 + 4163$
 $= 416300 + 41630 + 4163 = 462093$
3. 1212×112
 $= 1212 \times (100 + 10 + 2) = 1212 \times 100 + 1212 \times 10 + 1212 \times 2$
 $= 121200 + 12120 + 2424 = 135744$
4. 496×208
 $= 496 \times (200 + 8) = 496 \times 200 + 496 \times 8$
 $= 99200 + 3968 = 103168$
5. 47×51
 $= 47 \times (50 + 1) = 47 \times 50 + 47 \times 1 = 2397$
6. $63 \times 1993 = 63 \times (2000 - 7) = 126000 - 441 = 125559$
- F 1. $36 \div (9 - 5)$ 2. $(12 + 6) \div (6 - 3)$
 3. $(5 - 3) + 27$ 4. $7 \times (17 - 5)$
 5. $(27 + 5) - 9$

G HCF of \times LCM = Product of two numbers

$$4 \times 168 = 12 \times x$$

$$\frac{4 \times 168}{12} = x$$

$$x = 56$$

H $33 - 3 = 30$

$168 - 3 = 165$

3	30	5	165
2	10	3	31
5	5		1
	1		

Ans. Greatest number which will divide 33 and 168 is 5.

I 1. $(-6) + (-8) = -6 - 8 = -14$

2. $15 - (-15) = 15 + 15 = 30$

3. $-1 - (+5) = -1 - 5 = -6$

4. $-4 - (-4) = -4 + 4 = 0$

5. $(-6) - (+7) = -6 - 7 = -13$

6. $-15 - (-12) = -15 + 12 = -3$

J 1. AB, CD 2. GI, CD 3. CO, OD 4. $\overline{CBD}, \overline{BDH}$

K 1. $180 - 26 = 64^\circ$ 2. $180 - 42 = 48^\circ$

3. $180 - 23 = 67^\circ$ 4. $180 - 57 = 33^\circ$

5. $180 - 77 = 13^\circ$

L

Name of shape	Face	verties	Edges	Bases
Cube	6	4	4	8
Cuboid	6	8	12	8
Sphere	1	0	0	2
Cylinder	2	0	2	2
Cone	1	1	1	1

M Do it yourself

Model Test Paper 2

A 1. (b) 2. (c) 3. (a) 4. (d)

5. (b) 6. (a)

B 1. $125\frac{1}{10}$ 2. $43\frac{8}{100}$ 3. $201\frac{2}{10}$ 4. $\frac{36}{1000}$



- C 1. $2x - 3p$ 2. $3(a + b)$ 3. $2y - 5p$ 4. $p - q$
 5. $(25 + y) + t$ 6. $p + q$

D

S.No.	Fraction	Ratio	Read as	Simplest form
1.	$\frac{3}{5}$	3 : 5	3 is to 5	3 : 5
2.	$\frac{50}{300}$	50 : 300	50 is to 300	1 : 6
3.	$\frac{50}{20}$	50 : 20	50 is to 20	5 : 2
4.	$\frac{10}{5}$	10 : 5	10 is to 5	2 : 1
5.	$\frac{500}{1}$	500 : 1	500 is to 1	500 : 1
6.	$\frac{120}{200}$	120 : 200	120 is to 200	3 : 5
7.	$\frac{160}{100}$	160 : 100	160 is to 100	8 : 5
8.	$\frac{20}{3}$	20 : 3	20 is to 3	20 : 3
9.	$\frac{8}{24}$	8 : 24	8 is to 24	1 : 3

E Cost of 24 bananas = ₹48

$$\text{Cost of 1 bananas} = \frac{48}{24} = ₹2$$

$$\text{Cost of 6 banana} = 6 \times 2 = ₹12$$

F Let the breadth $l \times x$

$$\therefore \text{The length} = 2x$$

$$\text{Perimeter} = 2(l + b)$$

$$= 2(x + 2x) = 2(3x) = 162 = 6x = \frac{162}{6} = x$$

$$\text{Breadth} = 27 \text{ m}$$

$$\text{Length} = 2 \times 27 = 54 \text{ m}$$

$$\text{Area} = 27 \times 54 = 1458 \text{ m}^2$$

- G 1. Diamond 2. One 3. Line of symmetry
4. Mirror reflection 5. 6

H Do it yourself

I Do it yourself

J Do it yourself

- K 1. 60 2. 2018 3. 30 4. 4400