

Key book

Understanding Mathematics

SPECIAL EDITION

5



PROGRESS PUBLISHERS
KRISHNA NAGAR, DELHI - 110051

EMAIL : progresspublishers@gmail.com

Page No. 7

1. 1 9
 10 99
 100 999
 1000 9999
 10000 99999
 100000 999999
2. 1. Six lakh seventy-six thousand one hundred twelve
 2. Nine lakh sixty thousand one hundred seven
 3. Seven lakh thirty-five thousand six hundred twelve
 4. Five lakh fifteen thousand sixty-nine
 5. Three lakh four thousand thirty-five
 6. Eight lakh ninety thousand three hundred forty-five
3. 1. 2,42,907 2. 4,07,707 3. 8,09,090 4. 1,00,010 5. 9,99,999
4. 1. $60000 + 5000 + 900 + 40 + 2$
 2. $400000 + 70000 + 0 + 200 + 30 + 4$
 3. $200000 + 60000 + 8000 + 0 + 0 + 3$
 4. $300000 + 30000 + 8000 + 500 + 60 + 1$
 5. $700000 + 70000 + 7000 + 700 + 70 + 7$
 6. $900000 + 80000 + 5000 + 0 + 10 + 4$
5. 1. 70777 2. 643928 3. 528406 4. 9999909 5. 8654321

Page No. 8

- | | | | | | | | | | | | | | |
|--|----------|--------|-------|-----|----|---|---|----------|--------|-------|-----|----|---|
| <p>6. 1. 628914</p> <table style="margin-left: 100px;"> <tr><td>6,00,000</td></tr> <tr><td>20,000</td></tr> <tr><td>8,000</td></tr> <tr><td>900</td></tr> <tr><td>10</td></tr> <tr><td>4</td></tr> </table> | 6,00,000 | 20,000 | 8,000 | 900 | 10 | 4 | <p>2. 875439</p> <table style="margin-left: 100px;"> <tr><td>8,00,000</td></tr> <tr><td>70,000</td></tr> <tr><td>5,000</td></tr> <tr><td>400</td></tr> <tr><td>30</td></tr> <tr><td>9</td></tr> </table> | 8,00,000 | 70,000 | 5,000 | 400 | 30 | 9 |
| 6,00,000 | | | | | | | | | | | | | |
| 20,000 | | | | | | | | | | | | | |
| 8,000 | | | | | | | | | | | | | |
| 900 | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | |
| 8,00,000 | | | | | | | | | | | | | |
| 70,000 | | | | | | | | | | | | | |
| 5,000 | | | | | | | | | | | | | |
| 400 | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | |
| <p>3. 398715</p> <table style="margin-left: 100px;"> <tr><td>3,00,000</td></tr> <tr><td>90,000</td></tr> <tr><td>8,000</td></tr> <tr><td>700</td></tr> <tr><td>10</td></tr> <tr><td>5</td></tr> </table> | 3,00,000 | 90,000 | 8,000 | 700 | 10 | 5 | <p>4. 500862</p> <table style="margin-left: 100px;"> <tr><td>5,00,000</td></tr> <tr><td>0</td></tr> <tr><td>0</td></tr> <tr><td>800</td></tr> <tr><td>60</td></tr> <tr><td>2</td></tr> </table> | 5,00,000 | 0 | 0 | 800 | 60 | 2 |
| 3,00,000 | | | | | | | | | | | | | |
| 90,000 | | | | | | | | | | | | | |
| 8,000 | | | | | | | | | | | | | |
| 700 | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | |
| 5,00,000 | | | | | | | | | | | | | |
| 0 | | | | | | | | | | | | | |
| 0 | | | | | | | | | | | | | |
| 800 | | | | | | | | | | | | | |
| 60 | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | |
7. 1. 29700 2. 27000 3. 29997 4. 270000
 8. Smallest Greatest Smallest Greatest
 1. 4,85,005 9,91,250 3. 51,000 5,10,110
 2. 5,51,890 5,67,890 4. 6,35,429 7,64,987

9. 1. 5,13,724; 5,13,824; 5,13,924
 2. 3,25,965; 3,26,965; 3,27,965
 3. 4,35,187; 5,35,187; 6,35,187
10. 1. 10,447; 1,43,703; 2,35,017
 2. 8,00,808; 8,08,080; 8,80,808
 3. 9,17,623; 9,23,176; 9,32,761
11. 1. 5,73,694; 5,39,700; 2,84,109
 2. 2,88,907; 2,89,415; 2,89,901
 3. 5,50,550; 5,55,055; 5,55,550
12. 1. 103479 2. 954210 3. 1000479

Page No. 10

1. 1. 1000000 2. 10000000; 99999999 3. 100000000; 999999999
 4. 100000000 5. 9999999
2. 1. 6428546 2. 89246365 3. 582536972 4. 66240916 5. 71604890
3. 1. Seventy-three lakh twenty-nine thousand six hundred forty
 2. Sixty-two lakh forty-five thousand two hundred eighty-seven
 3. Ninety lakh forty-nine thousand eighty-seven
 4. Three crore twenty-one lakh sixty-five thousand seven hundred sixty-two
 5. Eight crore five lakh forty-six
 6. Nine crore twenty-five lakh forty-three thousand six hundred seventy-eight
4. 1. < 2. < 3. > 4. >
 5. < 6. =

Page No. 13

1. 1. 36,29,48,405 - Thirty-six crores twenty-nine lakh forty-eight thousand four hundred five
 2. 50,00,00,500 - Fifty crore five hundred
 3. 58,68,42,931 - Fifty-eight crore sixty-eight lakh forty-two thousand nine hundred thirty-one
 4. 70,07,70,77 - Seventy crore seven lakh seven thousand seventy-seven
 5. 86,10,06,453 - Eighty-six crore ten lakh six thousand four hundred fifty-three
 6. 93,40,70,809 - Ninety-three crore forty lakh seventy thousand eight hundred nine
 7. 99,99,99,999 - Ninety-nine crore ninety-nine lakh ninety-nine thousand nine hundred ninety-nine
 8. 80,05,00,462 - Eighty crore five lakh four hundred sixty-two
2. 1. 12,10,00,545 2. 6,00,32,107
 3. 62,09,00,031 4. 81,00,06,020
 5. 99,99,99,999

3. 1. **987654321**

90,00,00,000
8,00,00,000
70,00,000
6,00,000
50,000
4,000
300
20
1

2. **120304567**

10,00,00,000
2,00,00,000
0
3,00,000
0
4,000
500
60
7

3. **112435187**

10,00,00,000
1,00,00,000
20,00,000
4,00,000
30,000
5,000
100
80
7

4. **432809651**

40,00,00,000
3,00,00,000
20,00,000
8,00,000
0
9,000
600
50
1

4. 1. eight crores

2. seven lakhs

3. four ten-crores

4. nine thousands

5. 1. $600000 + 20000 + 8000 + 400 + 30 + 9$

2. $8000000 + 600000 + 40000 + 2000 + 100 + 70 + 8$

3. $900000000 + 80000000 + 7000000 + 300000 + 60000 + 9000 + 500 + 40 + 5$

4. $100000000 + 60000000 + 0 + 700000 + 40000 + 5000 + 900 + 20 + 3$

5. $700000000 + 0 + 6000000 + 0 + 90000 + 8000 + 400 + 70 + 2$

6. 1. 59,62,47,315

2. 85,00,68,436

3. 3,03,03,303

4. 80,00,08,088

5. 9,00,00,077

Page No. 15

1. 1. 30,100,973 Thirty million one hundred thousand nine hundred seven-three

2. 60,715,907 Sixty million seven hundred fifteen thousand nine hundred seven

3. 650,017,680 Six hundred fifty million seventeen thousand six hundred eighty

4. 743,689,168 Seven hundred forty-three million six hundred eighty-nine thousand one hundred sixty-eight

5. 843,589,263 Eight hundred forty-three million five hundred eighty-nine thousand two hundred sixty-three

Page No. 17

1. 1. 9,06,387 (Indian) Nine lakh six thousand three hundred eighty-seven
 906,387 (International) Nine hundred six thousand three hundred eighty-seven
2. 71,42,965 (Indian) Seventy-one lakh forty-two thousand nine hundred sixty-five
 7,142,965 (International) Seven million one hundred forty-two thousand nine hundred sixty-five
3. 39,25,013 (Indian) Thirty-nine lakh twenty-five thousand thirteen
 3,925,013 (International) Three million nine hundred twenty-five thousand thirteen
4. 68,23,46,758 (Indian) Sixty-eight crore twenty-three lakh forty-six thousand seven hundred fifty-eight
 682,346,758 (International) Six hundred eighty-two million three hundred forty-six thousand seven hundred fifty-eight
5. 50,67,41,693 (Indian) Fifty crore sixty-seven lakh forty-one thousand six hundred ninety-three
 506,741,693 (International) Five hundred six million seven hundred forty-one thousand six hundred ninety-three
6. 42,85,36,423 (Indian) Forty-two crore eighty-five lakh thirty-six thousand four hundred twenty-three
 428,536,423 (International) Four hundred twenty-eight million five hundred thirty-six thousand four hundred twenty-three
2. 9,99,99,999 (Indian) Nine crore ninety-nine lakh ninety-nine thousand nine hundred ninety-nine
 99,999,999 (International) Ninety-nine million nine hundred ninety-nine thousand nine hundred ninety-nine

Page No. 19 MCQ - I

- | | | |
|--------------------|---------------|---------------------------|
| 1. 11,257 | 2. 23,517 | 3. 40,000 + 500 + 3 |
| 4. 10,447 | 5. 10,043,703 | 6. crores period |
| 7. millions period | | 8. largest 4-digit number |
| 9. 10 | 10. 100 | |

UNIT 2**Page No. 22**

- | | | | | |
|----------|------------|--------------|----------|----------|
| 1. XVI | 2. XXV | 3. XXVII | 4. XXXII | 5. XXIX |
| 6. XIV | 7. XXXVIII | 8. XL | 9. XLVII | 10. LV |
| 11. LXIX | 12. LXXII | 13. LXXXVIII | 14. XC | 15. XCIX |

- | | | | | |
|--------------|-----------|----------|---------|---------|
| 2. 1. 14 | 2. 16 | 3. 22 | 4. 25 | 5. 38 |
| 6. 49 | 7. 48 | 8. 76 | 9. 87 | 10. 111 |
| 11. 91 | 12. 157 | | | |
| 3. 1. ✗ | 2. ✓ | 3. ✗ | 4. ✗ | 5. ✓ |
| 6. ✗ | 7. ✓ | 8. ✗ | 9. ✓ | |
| 4. 1. > | 2. > | 3. > | 4. < | 5. < |
| 6. < | 7. < | 8. < | 9. < | |
| 5. 1. LXXXIV | 2. LXXXII | 3. LXVII | 4. XXIX | |
| 5. XXXVII | 6. X | | | |

UNIT 3

Page No. 23

1. 1. 112489 2. 168320 3. 116944 4. 184050

Page No. 24

1. 1. 8369649 2. 5931714 3. 10616801
 4. 18167439 5. 66191119 6. 135193905
2. 1. 637620 2. 57503648 3. 41493114

Page No. 25

1. 1. 257804 2. 231302 3. 587927 4. 264929
1. 1. 4762067 2. 6481152 3. 264929 4. 29512557
 5. 2885728 6. 6158062 7. 322991910 8. 291779999
 9. 15990225 10. 48815168
2. 1676686 3. 663869

Page No. 26

4. 1. 5634605 2. 5974962 3. 9545635
 – 2721443 – 3876454 – 7237628
 2913162 2098508 2308007
5. 1. 98668806 2. 636777917 3. 9277189
6. 1. 3133 2. 168591 3. 15856
 4. 46642525; In April by 39468703

Page No. 28

1. 1. 2643 2. 3748 3. 1 4. 0
 5. 24 6. 2360
2. 1. 16840, 168400, 1684000 2. 7500, 75000, 750000
 3. 89000, 890000, 8900000
3. 1. 378050 2. 292740 3. 2048700 4. 11106000
 5. 1193400 6. 165284000
4. 1. 3460 2. 146300 3. 82600 4. 3728000
 5. 12500 6. 1629000

Surprising Number Patterns

9874568, 98634568, 98765234568,
9876541234568, 987654301234568

Page No. 29

- | | | | |
|--------------|-------------|--------------|--------------|
| 1. 1. 287700 | 2. 2389010 | 3. 1177848 | 4. 3286082 |
| 5. 8557959 | 6. 8629752 | 7. 851115 | 8. 2085135 |
| 9. 832464 | 10. 4292822 | 11. 43344180 | 12. 27244875 |

Page No. 30

- | | | |
|---------------|-----------|-----------|
| 2. 1. 415 | 2. 6835 | 3. 2400 |
| 4. 21050 | 5. 108700 | 6. 70375 |
| 7. 11400 | 8. 19100 | 9. 785375 |
| 3. 1. 3882250 | 2. 43702 | 3. 53874 |

Page No. 31

- | | | |
|-------------|------------|------------|
| 1. 1. 12827 | 2. 98805 | 3. 6271200 |
| 4. 7021000 | 5. 9370361 | 6. 3012000 |
| 7. 2933775 | 8. 149240 | 9. 54384 |

Page No. 32

- | | | |
|---------------|------------|------------|
| 1. 1. 16137 | 2. 1647044 | 3. 3046950 |
| 4. 810000 | 5. 621126 | 6. 6037900 |
| 7. 14994 | 8. 9024650 | 9. 195840 |
| 2. 1. 4009825 | 2. 8768428 | |

Math Connections

- | | | | |
|-----------|-----------|-----------|----------|
| 2. 235625 | 3. 581972 | 4. 180635 | 5. 92541 |
| 6. 95202 | 7. 645498 | 8. 114597 | |

Page No. 33

- | | | | |
|---------|--------|--------|--------|
| 1. 1. 9 | 2. 11 | 3. 12 | 4. 182 |
| 5. 107 | 6. 33 | 7. 49 | 8. 61 |
| 9. 22 | 10. 12 | 11. 22 | 12. 65 |

Page No. 34

- | | | | | |
|-------------|--------------|-----------------------|--------------|-----------|
| 1. 1. 36, 2 | 2. 61, 0 | 3. 131, 2 | 4. 34, 1 | |
| 5. 37, 23 | 6. 243, 4 | 7. 1435, 24 | 8. 5647, 43 | |
| 9. 1764, 3 | 10. 3549, 23 | 11. 2707, 24 | 12. 1949, 72 | |
| 2. 1. 44557 | 2. 376129 | 3. 575682 | 4. 273435 | 5. 622851 |
| 3. 1. 26708 | 2. 17895 | 3. 6875 _{kg} | 4. 2826 | 5. 4796 |

Page No. 35

4. 1. 2800 2. 183750

The Partially Completed Choice Puzzle

- | | | | |
|-------------|-------------|-------------|-------------|
| 1. 3158643 | 2. 8023054 | 3. 6552565 | 4. 4621818 |
| 5. 7141470 | 6. 4812310 | 7. 2132767 | 8. 3864742 |
| 9. 1056181 | 10. 5252413 | 11. 8321122 | 12. 6058437 |
| 13. 4561716 | 14. 3458007 | | |

Page No. 37

1. 1. 760, 800, 1000 2. 8490, 8500, 8000
3. 9480, 9500, 9000 4. 67890, 67900, 68000
2. 2. 2450 to 2499; 2501 to 2549
3. 10750 to 10799; 10801 to 10849

Page No. 38

3. 1. 42 2. 349 3. 6575

Page No. 40

	Estimation	Actually		Estimation	Actually		Estimation	Actually
1.	1. 10000	9872	2.	17000	16516	3.	9000	9217
	4. 11000	11141	5.	15000	14265	6.	15000	14702
2.	1. 5000	4514	2.	3000	3025	3.	5000	4502
	4. 2000	2128	5.	1000	1039	6.	5000	4264
3.	1. 11400	12096	2.	92800	93058	3.	46400	47922
	4. 761100	764272	5.	185000	185000	6.	18427200	18435971
4.	1. 20	21	2.	9.8	9.42	3.	4.00	4.02
	4. 5	4.85	5.	3.06	3.02	6.	9.6	9.13
5.	1. Yes,		2.					

Page No. 41 Worksheet

- | | | | | |
|----------|---------|---------|---------|---------|
| 1. 36105 | 2. 766 | 3. 203 | 4. 340 | 5. 888 |
| 6. 81 | 7. 187 | 8. 567 | 9. 558 | 10. 815 |
| 11. 617 | 12. 228 | 13. 348 | 14. 745 | 15. 983 |

Page No. 42 MCQ - II

- | | | | |
|--------------|-----------|-------------|-----------|
| 1. 100999998 | 2. 164343 | 3. 7,50,000 | 4. 160000 |
| 5. 46,336 | 6. 1,001 | 7. 15 | 8. 53,300 |
| 9. 100 | 10. 5400 | | |

UNIT 4

Page No. 45

1. 1438, 3740, 96832, 87564
2. 702, 585, 5724
3. 895, 4830, 3785, 4760

Page No. 46

4. 684, 1629, 9468, 8532
 5. 820, 63500, 9070
 6. 462, 396, 715, 253, 231, 1837
 7. 462304, 135912, 365200
 8. 1463512, 5379704
 9. 9123456
 10. 9214356
2. 1. 43686
 2. 97650
 3. 864
 4. 831776
 5. 345624

Shady Division

Divisible by 9 18, 27, 99, 36, 90, 63, 54

Divisible by 8 40, 8, 88, 24, 16, 32, 56, 96, 80, 24, 32, 64

Divisible by 5 15, 20, 45, 35, 30, 10, 55, 5, 50, 25, 60, 40

Page No. 47 Worksheet

2. yes, no, no, no
3. no, no, no, no
4. no, no, no, no
5. no, yes, yes, no
6. yes, yes, yes, no

Number Clubs

580 2, 3, 4, 5, 10

441 3

638 2

1458 2, 3, 6

6072 2, 3, 4, 6, 8, 12

9000 2, 3, 4, 5, 6, 8, 10, 12

4648 2, 4, 8

UNIT 5

Page No. 49

1. 1. 1, 2, 4, 5, 8, 10, 20, 40
 2. 1, 3, 17, 51
 3. 1, 2, 4, 7, 8, 14, 28, 56
 4. 1, 3, 7, 9, 21, 63
 5. 1, 2, 4, 17, 34, 68
 6. 1, 2, 3, 6, 17, 34, 51, 102
2. 1. 7, 14, 21, 28
 2. 9, 18, 27, 36
 3. 4, 8, 12, 16
 4. 11, 22, 33, 44
 5. 17, 34, 51, 68
 6. 15, 30, 45, 60

Page No. 52

1. 1. 1
2. 2, 3
3. 2
4. Yes, except 2
5. No; 7, 11
6. 2
7. 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73, 79, 83, 89, 97
8. (2,3); (5,7); (11,13); (17,19); (29,31); (41,43); (71,73)

9. 23, 37, 53, 73

10. 19, 37, 59, 97

11. 23, 61, 83, 97

2. 1. false

2. true

3. true

4. true

5. false

6. false

3. 1. (3,5); (5,7); (11,13)

2. (13,17); (17,19); (19,23)

Puzzle

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

2. 15, 30, 45, 60, 90, 105, 120, 135, 150

3. 3, 7, 11, 17, 43, 71, 89

Page No. 54

1. 1. $1 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$

3. $2 \times 3 \times 3 \times 3$

5. $3 \times 5 \times 11$

7. $2 \times 2 \times 2 \times 2 \times 3$

9. $2 \times 2 \times 2 \times 3 \times 3$

11. $2 \times 2 \times 2 \times 2 \times 2$

2. 1. $2 \times 2 \times 3 \times 3$

3. $2 \times 2 \times 2 \times 7$

5. $3 \times 5 \times 11$

7. $2 \times 3 \times 3 \times 7$

3. 1. C

2. P

3. C

4. C

5. C

6. P

7. P

8. C

9. C

10. C

11. P

12. C

Page No. 56

1. 1. 1, 11

2. 1, 7

3. 1, 7

4. 1, 3

5. 1, 3

6. 1, 7

7. 1, 3, 5, 15

8. 1, 11

9. 1, 5

2. 1. 4

2. 8

3. 25

4. 15

5. 16

6. 36

7. 5

8. 6

9. 5

10. 27

3. 1. 9

2. 1

3. 17

4. 8

5. 36

6. 115

Page No. 57

Puzzle

625

Page No. 58

1. 1. 15

2. 12

3. 20

4. 30

5. 12

6. 12

2. 1. 210 2. 120 3. 36 4. 72 5. 48
 6. 72 7. 72 8. 144 9. 300
 10. 360 11. 150 12. 288

Page No. 59

1. 1. 1764 2. 1440 3. 1800
 4. 180 5. 1008 6. 17712

Page No. 60

1. 1. 14850 2. 1 p.m.
 3. 432 4. 23188

Page No. 62 MCQ - III

1. 91 2. 42 3. $2 \times 2 \times 3 \times 5$ 4. 10 5. 200
 6. $2 \times 3 \times 3 \times 5$ 7. 36 8. 360 9. 8 10. 3

UNIT 6

Page No. 64

2. numerator 5; denominator 12
 3. $\frac{5}{9}, \frac{2}{7}, \frac{3}{8}$ 4. $\frac{7}{3}, \frac{5}{2}, \frac{20}{17}$ 5. $\frac{4}{11}, \frac{7}{11}, \frac{10}{11}$ 6. $\frac{15}{7}, \frac{15}{11}, \frac{15}{13}$
 7. 1. $\frac{6}{10}, \frac{9}{15}, \frac{12}{20}$ 2. $\frac{2}{16}, \frac{3}{24}, \frac{4}{32}$ 3. $\frac{4}{8}, \frac{6}{12}, \frac{8}{16}$ 4. $\frac{10}{4}, \frac{15}{6}, \frac{20}{8}$

Page No. 65

8. 1. $\frac{2}{5} = \frac{4}{10} = \frac{6}{15} = \frac{8}{20} = \frac{10}{25}$ 2. $\frac{3}{5} = \frac{6}{10} = \frac{9}{15} = \frac{12}{20}$
 3. $\frac{2}{3} = \frac{10}{15} = \frac{12}{18} = \frac{8}{12}$
 9. 1. $\frac{10}{13}$ 2. $\frac{10}{16}$ 3. $\frac{15}{9}$
 10. 1. $\frac{4}{12}$ 2. $\frac{8}{11}$ 3. $\frac{1}{4}$

Page No. 67

1. 1. $\frac{5}{4}$ 2. $\frac{11}{4}$ 3. $\frac{30}{9}$ 4. $\frac{15}{4}$ 5. $\frac{29}{6}$
 6. $\frac{58}{9}$ 7. $\frac{67}{12}$ 8. $\frac{47}{3}$
 2. 1. $1\frac{4}{5}$ 2. $4\frac{5}{8}$ 3. $6\frac{2}{3}$ 4. $3\frac{1}{8}$ 5. $4\frac{3}{4}$

6. $4\frac{3}{10}$

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

8. $9\frac{6}{11}$

3. Proper fractions

$\frac{3}{9}, \frac{2}{3}, \frac{99}{100}, \frac{7}{77}$

Improper fractions

$\frac{5}{2}, \frac{3}{2}, \frac{9}{7}, \frac{100}{99}, \frac{77}{7}$

Mixed fractions

$6\frac{1}{6}, 1\frac{1}{4}, 2\frac{1}{2}$

Page No. 69

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

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

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

4. $\frac{2}{3}$

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

6. $\frac{3}{5}$

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

8. $\frac{6}{7}$

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

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

11. $\frac{5}{9}$

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

2. 1. 6

2. 8

3. 15

4. 12

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

Think, Think, Think !

1. 4, 20, 23

2. 5, 8, 8, 3

3. 6, 42, 47

4. 9, 2, 2, 2

Page No. 70

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

2. $\frac{4}{9}$

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

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

5. $\frac{2}{3}$

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

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

8. $\frac{1}{2}$

9. $\frac{5}{7}$

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

2. 1. $\frac{21}{31}$

2. $\frac{7}{15}$

3. $\frac{1}{4}$

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

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

6. $\frac{1}{5}$

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

Page No. 71

1. 1. 10, 7

2. 9, 2

3. 6, 1

4. 5, 1

2. 1. 12

2. 3

3. 15

4. 12

5. 6

6. 44

7. 35

8. 56

3. 1. eaten 6; left 18

2. 10cm; left 40cm

3. 21 children can swim

Page No. 74

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

2. $\frac{3}{5}$

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

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

5. $\frac{7}{8}$

6. $\frac{8}{11}$

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

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

2. 1. $\frac{7}{12}$ 2. $\frac{7}{10}$ 3. $\frac{4}{9}$ 4. $\frac{7}{10}$ 5. $\frac{9}{16}$ 6. $\frac{2}{8}$
7. $\frac{2}{14}$ 8. $\frac{15}{18}$
3. 1. $\frac{3}{10}, \frac{2}{5}, \frac{7}{15}$ 2. $\frac{1}{3}, \frac{2}{5}, \frac{1}{2}$ 3. $\frac{7}{9}, \frac{5}{6}, \frac{11}{12}$
4. $\frac{8}{15}, \frac{11}{18}, \frac{7}{10}$ 5. $\frac{2}{3}, \frac{3}{4}, \frac{7}{8}$ 6. $\frac{4}{5}, \frac{7}{8}, \frac{9}{10}$
4. 1. $\frac{9}{10}, \frac{13}{15}, \frac{5}{6}$ 2. $\frac{2}{5}, \frac{5}{16}, \frac{3}{10}$ 3. $\frac{7}{9}, \frac{2}{3}, \frac{1}{2}$
4. $\frac{7}{10}, \frac{5}{8}, \frac{3}{5}$ 5. $\frac{7}{10}, \frac{2}{3}, \frac{3}{5}$ 6. $\frac{5}{6}, \frac{3}{4}, \frac{7}{12}$

Page No. 76

1. 1. $\frac{6}{8}$ 2. $\frac{15}{19}$ 3. $\frac{12}{11}$ 4. 1 5. 1 6. $\frac{17}{10}$
2. 1. 3 2. $\frac{24}{9}$ 3. $\frac{41}{5}$ 4. 4 5. $\frac{26}{7}$ 6. $\frac{61}{8}$
7. $\frac{22}{5}$ 8. 4 9. $\frac{39}{6}$

Brain Tuner

$\frac{1}{4}, \frac{3}{4}$	$\frac{2}{3}, \frac{1}{3}$	$\frac{7}{8}, \frac{1}{8}$	$\frac{5}{8}, \frac{3}{8}$
$\frac{1}{2}, \frac{5}{10}$	$\frac{1}{10}, \frac{9}{10}$	$\frac{5}{12}, \frac{7}{12}$	$\frac{3}{10}, \frac{7}{10}$

Page No. 77

1. 1. $\frac{2}{3}$ 2. $1\frac{5}{12}$ 3. $\frac{8}{9}$ 4. $\frac{7}{10}$ 5. $\frac{37}{30}$ 6. $\frac{31}{20}$
7. $\frac{18}{12}$ 8. $\frac{22}{24}$ 9. $\frac{19}{24}$ 10. $\frac{13}{18}$ 11. $\frac{9}{18}$ 12. $\frac{37}{30}$

Page No. 78

1. 1. $5\frac{1}{6}$ 2. $9\frac{9}{20}$ 3. $6\frac{1}{10}$ 4. $9\frac{5}{6}$ 5. $5\frac{10}{21}$ 6. $4\frac{1}{9}$
7. $7\frac{11}{12}$ 8. $6\frac{9}{16}$
2. 1. $7\frac{11}{12}$ 2. $5\frac{1}{4}$ 3. $9\frac{7}{8}$ 4. $\frac{47}{60}$ 5. $3\frac{7}{10}$

Page No. 79

1. 1. $\frac{2}{11}$ 2. $\frac{2}{5}$ 3. $\frac{4}{13}$ 4. $\frac{1}{3}$ 5. $\frac{1}{2}$ 6. $\frac{10}{13}$
 7. $\frac{1}{5}$ 8. $\frac{1}{3}$
 2. 1. $\frac{7}{4}$ 2. $\frac{11}{5}$ 3. $\frac{3}{2}$ 4. $\frac{13}{5}$ 5. 3 6. $\frac{5}{2}$
 7. $\frac{29}{9}$ 8. $\frac{7}{4}$
 Puzzle $\frac{1}{2}$

Page No. 80

1. 1. $\frac{4}{5}$ 2. $\frac{4}{9}$ 3. $\frac{1}{9}$ 4. $\frac{1}{3}$ 5. $\frac{1}{8}$ 6. $\frac{7}{10}$
 7. $\frac{5}{4}$ 8. $\frac{9}{5}$ 9. $\frac{11}{7}$ 10. $\frac{8}{5}$ 11. $\frac{12}{7}$ 12. $\frac{7}{4}$

Page No. 81

1. 1. $\frac{7}{15}$ 2. $\frac{1}{35}$ 3. $\frac{8}{45}$ 4. $\frac{2}{15}$ 5. $\frac{5}{24}$ 6. $\frac{3}{2}$
 7. $\frac{7}{4}$ 8. $\frac{5}{6}$
 2. 1. $\frac{1}{40}$ 2. $2\frac{7}{12}$ 3. $2\frac{3}{10}$

Page No. 82

1. 1. $\frac{1}{4}$ 2. $\frac{14}{12}$ 3. $\frac{7}{12}$ 4. $\frac{3}{4}$ 5. $\frac{11}{24}$ 6. $\frac{5}{6}$
 7. $\frac{15}{24}$ 8. $\frac{25}{24}$
 2. 1. $\frac{71}{24}$ 2. $\frac{5}{8}$
 3. 1. $\frac{1}{15}$ 2. 3 3. $\frac{1}{5}$

Page No. 83

1. 1. $\frac{9}{4}$ 2. $\frac{15}{4}$ 3. $\frac{8}{3}$ 4. $\frac{30}{7}$ 5. $\frac{18}{5}$ 6. 6
 7. 9 8. 10 9. $\frac{35}{3}$ 10. 11 11. 30 12. $16\frac{1}{2}$

Fraction Puzzlers

1. 10 days 2. $\frac{1}{5}$ 3. $\frac{4}{5}$

Page No. 84

1. 1. $\frac{8}{15}$ 2. $\frac{1}{10}$ 3. $\frac{3}{20}$ 4. $\frac{11}{20}$ 5. $\frac{2}{3}$ 6. $\frac{15}{28}$
 7. $\frac{7}{10}$ 8. $\frac{3}{2}$
2. 1. 1 2. $\frac{13}{6}$ 3. 3 4. $\frac{1}{2}$ 5. $\frac{5}{4}$ 6. $\frac{26}{17}$

Puzzle 1

Page No. 85

3. 1. 21 kg 2. $13\frac{1}{8}$ 3. 36 kg 4. $37\frac{1}{2}$ 5. 180 6. 35

Page No. 86

1. 1. 3 2. 6 3. 24 4. 4 5. 9 6. 30
 7. 10 8. 8
2. 1. $\frac{3}{8}$ 2. $\frac{2}{11}$ 3. $\frac{2}{5}$ 4. $\frac{2}{9}$ 5. $\frac{5}{24}$ 6. $\frac{2}{7}$
 7. $\frac{9}{20}$ 8. $\frac{7}{48}$ 9. $\frac{3}{20}$ 10. $\frac{2}{11}$ 11. $\frac{1}{12}$ 12. $\frac{1}{15}$

Page No. 87

1. 1. $1\frac{15}{49}$ 2. $\frac{5}{6}$ 3. 2 4. $\frac{5}{4}$ 5. $2\frac{2}{9}$ 6. $1\frac{1}{7}$
 7. $\frac{9}{20}$ 8. $2\frac{1}{4}$ 9. $1\frac{1}{8}$ 10. $4\frac{1}{6}$ 11. 12 12. $1\frac{3}{7}$
2. 1. $\frac{1}{2}$ 2. $\frac{3}{4}$ 3. 10 4. 8 5. $\frac{3}{4}$

Page No. 88

2. 1. $\frac{1}{2}$ 2. $\frac{3}{4}$

Page No. 90 MCQ - IV

1. $\frac{1}{6}$ 2. $\frac{4}{9} \times \frac{1}{2}$ 3. 2 kg 4. $10\frac{2}{3}$ 5. $\frac{7}{9}$
 6. $\frac{2}{8}$ 7. $\frac{7}{8}$ 8. 300 9. $7\frac{1}{2}$ 10. 24

UNIT 7**Page No. 93**

1. 1. .9 2. 2.7 3. .37 4. 1.45
 2. 1. zero point nine 2. zero point one seven
 3. four point three 4. twenty one point four five

5. ten point zero seven five 6. seventy eight point one two
 7. five point eight six one 8. thirty four point four five eight
3. 1. .3 2. 2.4 3. 41.98 4. .553
 5. 9.149 6. 81.092
4. 1. 521.08 2. 39.471 3. 802.124

Page No. 94

1. 1. In fraction $80 + 6 + \frac{3}{10} + \frac{2}{100}$
 In decimal $80 + 6 + .3 + .02$
2. In fraction $50 + 8 + \frac{4}{10} + \frac{1}{100}$
 In decimal $50 + 8 + .4 + .01$
3. In fraction $4 + \frac{9}{10} + \frac{3}{100} + \frac{7}{1000}$
 In decimal $4 + .9 + .03 + .007$
4. In fraction $10 + 6 + \frac{1}{10} + \frac{3}{100} + \frac{9}{1000}$
 In decimal $10 + 6 + .1 + .03 + .009$
5. In fraction $200 + 60 + 4 + \frac{2}{10} + \frac{5}{100} + \frac{7}{1000}$
 In decimal $200 + 60 + 4 + .2 + .05 + .007$
6. In fraction $600 + 40 + 2 + \frac{4}{10} + \frac{2}{100} + \frac{8}{1000}$
 In decimal $600 + 40 + 2 + .4 + .02 + .008$
2. 1. 129.1 2. 647.32 3. 408.134 4. 792.543
3. 1. 45.723 2. 34.612 3. 456.725 4. 642.357

Page No. 96

1. 1. $\frac{7}{10}$ 2. $\frac{7}{100}$ 3. $\frac{101}{1000}$ 4. $\frac{3}{1000}$ 5. $\frac{75}{1000}$
6. $1\frac{7}{10}$ 7. $\frac{274}{1000}$ 8. $14\frac{5}{100}$ 9. $5\frac{16}{100}$ 10. $17\frac{7}{1000}$
11. $23\frac{158}{1000}$ 12. $20\frac{101}{1000}$

Page No. 97

2. 1. .09 2. .8 3. .32 4. .43 5. .002 6. .081
 7. 1.2 8. 3.005 9. 4.02 10. 5.81 11. 14.007 12. 13.126

3. 1. 0.5 2. 0.75 3. 0.8 4. 0.45 5. 0.28
 6. 1.4 7. 3.16 8. 5.3
1. 1. **.300** .290 .104 2. **4.600** 7.910 5.283
 3. **1.290** 2.300 2.143 4. **0.600** 52.270 7.836
 5. **22.100** 20.090 21.389 6. 1.982 1.200 1.340

Page No. 98

1. 1. .73 2. .07 3. .37 4. .362 5. .976 6. .063
 7. 1.7 8. 1.03 9. 1.52
2. 1. .31 2. .452 3. .001 4. .7643 5. .013 6. 1.45

Page No. 100

1. 1. 18.196 2. 58.4494 3. 90.2229 4. 917.6875
 5. 855.4849 6. 255.8308 7. 83.182 8. 738.495
 9. 6668.2921 10. 237.9530
2. 1. 29.135 2. 700.9 3. 517.33 4. 23.572

Magic Squares in Decimals

1. 1.5 0.9 1.8 2. **2.0** **2.1** 1.3
 1.3 1.4 **1.5** **1.1** 1.8 **2.5**
 1.4 **1.9** **0.9** 2.3 **1.5** **1.6**

Page No. 101

1. 1. 34.5766 2. 26.7490 3. 85.1634 4. 144. 5141
 5. 76.2744 6. 9.5655 7. 42.0893 8. 9.0001
 9. 331.58575 10. 1634.5
2. 1. 4.53 2. 4.61 3. 19.7 4. 576305.04151

Page No. 102

3. 1. 734.25 2. 8.28 3. 22.472 4. 26.45
 5. a. 634.05 b. 72.75 c. 108

Puzzle

- 22.46 15.73 2.97; 0.13

Page No. 103

1. 1. 0.9 2. 0.35 3. 0.11 4. 2.5 5. 8.4
 6. 4.4 7. 4.5 8. 0.012 9. 0.072
2. 1. 39.42 2. 26.056 3. 70.015 4. 14.084 5. 198.08
 6. 165.4984 7. 757.44 8. 6045.116

Page No. 105

1. 1. 6 2. 0.6 3. 0.73 4. 0.009 5. 35.7
 6. 90.325 7. 7 8. 0.8 9. 0.09 10. 5.2
 11. 790 12. 3700.8 13. 2 14. 1190 15. 23200
 16. 6210.1

1. 1. 204.75 2. 34.335 3. 105.393 4. 593.664
5. 18.9075 6. 162.4 7. 316.11 8. 112.566
9. 336.2055 10. 726.0192 11. 295.775 12. 166.68716

Page No. 106

1. 1. 332.5 2. 103.5 3. 663.3 4. 97.5 5. 191.45

Puzzle

$$(3.84 \times 5) + 4.48 = (4 \times 5.13) + 3.16$$

Page No. 107

1. 1. 2.9 2. 1.6 3. 2.48 4. 12.78 5. 1.6
6. 0.9 7. 0.45 8. 15.24 9. 16.97

Page No. 108

1. 1. 0.06 2. 0.009 3. 0.635 4. 3.6823 5. 56.256
6. 0.039 7. 0.002 8. 0.00007 9. 4.853 10. 0.549
11. 0.0067 12. 59.3105 13. 0.0003 14. 0.00004 15. 0.000008
16. 0.3167 17. 0.038537 18. 98.7654

Page No. 110

1. 1. 8 2. 1.5 3. 0.54 4. 0.77 5. 3.07
6. 1.54
2. 1. 12.78 2. 16.93 3. 3.58 4. 16.97 5. 21
6. 36.1 7. 34.7 8. 6.24 9. 7.24
3. 1. 4.25 2. 94.5 3. 700 4. 40.34 5. 49.19

Puzzle

$$(21.21 \div 7) \times 8 = (36.36 \div 9) \times 6$$

Page No. 111

1. 1. 58 2. 1 3. 12 4. 3 5. 4
6. 8 7. 30 8. 6
2. 1. 1.7 2. 1.5 3. 7.4 4. 6.4 5. 5.2
6. 4.3 7. 3.8 8. 3.7
3. 1. 48.29 2. 2.98 3. 8.00 4. 17.07 5. 50.05
6. 6.01 7. 5.44 8. 3.45
4. 1. 17, 9, 23, 5, 46
2. 17.0, 8.7, 23.1, 4.6, 46.5
3. 17.02, 8.70, 23.11, 4.63, 46.49

Page No. 113 MCQ - V

1. .93657 2. 8.30 3. .052>.0052 4. five thousandths
5. .0089 6. 0.62 7. 0.82 8. 750.28 9. $3\frac{7}{20}$
10. 117.33

UNIT 8

Page No. 117

1. 1. 9563 2. 675 3. 5205 4. 908 5. 64070
6. 501 7. 50090 8. 1207 9. 72312
2. 1. 7.65m 2. 9.673m 3. 8.672m 4. 9264.6m
3. 1. 95.46846 2. 479.65 3. 36.42 4. 73895 5. 96.5
6. 16.625
4. 1. 6.328 2. 5.903 3. 8.00246 4. 9.462
5. 1. 3.475 2. 0.896 3. 1.843 4. 25.860
5. 73.340 6. 9.075

Page No. 118

1. 1. 78.085 2. 173.141 3. 111.88 4. 299.35
2. 1. 1830m 2. 326m16cm
3. 79m28cm

Page No. 119

1. 1. 60 567 2. 527 663 3. 166 77 4. 666 77
2. 1. 269m 80cm 2. 42m 20cm
3. 449km 089m

Page No. 120

1. 1. 322 65 2. 382 85 3. 37 24 4. 135 216
5. 3587 96 6. 1904 14 7. 1004 53 8. 11196
2. 1. 129m 75cm 2. 40m 3. 47m 25cm

Page No. 121

1. 1. 8m 14cm 2. 13km 75cm 3. 37km 425m
4. 2km 809m 5. 7m 26cm 6. 45m 20cm
7. 15km 8. 76m 12cm
2. 1. 95cm 2. 1m 23cm 3. 1m 35cm

Page No. 122

1. 1. 140 014 2. 30 833 3. 105 405 4. 642 187
2. 1. 271kg 798g 2. 19g 35cg
1. 1. 663 177 2. 312 114
3. 735 567 4. 302 428

Page No. 123

2. 1. 34.62kg 2. 17kg 250g
3. 57kg 500g
1. 1. 25kg 04g 2. 21kg 200g 3. 25kg 500g

4. 42kg 300g 5. 330kg 750g 6. 9169kg 719g
7. 4941kg 300g 8. 6138kg

Brain Tuner

2

Page No. 124

2. 1. 4dag 8g 75cg 0mg 2. 99kg 375g
3. 21kg 4. 300g 5. 134kg
1. 1. 43kg 200g 2. 54kg 641g 3. 56kg 407g
4. 84kg 610g 5. 40kg 920g 6. 72kg 961g
2. 1. 215g 2. 3kg 7hg 5dag 1g
3. 150g 4. 9dag 7g

Page No. 125

1. 1. 204l 0dl 5cl 2. 254l 6dl 3cl 3. 32l 480ml 4. 1162kl 910l

Page No. 126

2. 1. 299l 4dl 6cl 2. 37l 100ml
1. 1. 38dl 5cl 6ml 2. 16dl 5cl 7ml 3. 5l 280ml 4. 435kl 157l
2. 1. 87l 3dl 5cl 2. 134kl 400l 3. 43l 3dl 3cl

Page No. 127

1. 1. 72l 400ml 2. 77l 640ml 3. 92l 015ml 4. 49l 840ml
5. 164l 97ml 6. 528kl 77l 6. 391l 6dl 8cl 8. 1012kl 5hl 2dal
2. 1. 161l 400ml 2. 118kl 2hl 1dal 3. 62l 500ml 4. 6l

Page No. 128

1. 1. 715ml 2. 75l 3ml 3. 21l 96ml 4. 63l 04ml
5. 17l 550ml 6. 8l 3ml 7. 12dal 5l 8dl 8. 10hl 3dal 4l
9. 19l 9dl 7cl 10. 18dl 3cl 4ml
2. 1. 11l 8dl 4cl 2. 69l 57ml 3. 245ml 4. 14km

Page No. 130

1. 1. 60cm 2. 30cm 3. 2cm 4. 120cm
5. 30g 6. 8kg 7. 100g 8. 500g
9. 500ml 10. 100ml 11. 15l 12. 1l

Page No. 132 MCQ - VI

1. 1kg 50g 2. 1kg 170g 3. 2146km 4. 20 crates
5. 2.823km 6. 338,880 sq.metre 7. 171km
8. 68cm 9. metre 10. 135kg

UNIT 9

Page No. 134

- | | | | |
|-----------|--------|--------|--------|
| 1. 1. 11% | 2. 98% | 3. 23% | 4. 47% |
| 5. 60% | 6. 55% | | |
| 2. 1. 25% | 2. 37% | 3. 46% | 4. 69% |
| 5. 73% | 6. 89% | | |
| 1. 1. 50% | 2. 75% | 3. 25% | 4. 10% |

Page No. 135

- | | | | |
|---------------------------|-------------------------|-------------------------|-------------------------|
| 1. 1. $\frac{40}{100}$ 40 | 2. $\frac{70}{100}$ 70 | 3. $\frac{90}{100}$ 90 | 4. $\frac{56}{100}$ 56 |
| 5. $\frac{66}{100}$ 66 | 6. $\frac{75}{100}$ 75 | 7. $\frac{50}{100}$ 50 | 8. $\frac{75}{100}$ 75 |
| 9. $\frac{84}{100}$ 84 | 10. $\frac{86}{100}$ 86 | 11. $\frac{75}{100}$ 75 | 12. $\frac{30}{100}$ 30 |

Brain Tuner

- | | | |
|--------|--------|--------|
| 1. 24% | 2. 61% | 3. 15% |
|--------|--------|--------|

Page No. 136

- | | | |
|--------------------------------------|------------------------------------|------------------------------------|
| 1. 1. $\frac{20}{100} = \frac{1}{5}$ | 2. $\frac{35}{100} = \frac{7}{20}$ | 3. $\frac{16}{100} = \frac{4}{25}$ |
|--------------------------------------|------------------------------------|------------------------------------|

Page No. 137

- | | | | |
|---------------------------------------|-------------------------------------|------------------------------------|-------------------------------------|
| 2. 1. $\frac{10}{100} = \frac{1}{10}$ | 2. $\frac{20}{100} = \frac{1}{5}$ | 3. $\frac{24}{100} = \frac{6}{25}$ | 4. $\frac{55}{100} = \frac{11}{20}$ |
| 5. $\frac{36}{100} = \frac{9}{25}$ | 6. $\frac{72}{100} = \frac{18}{25}$ | 7. $\frac{75}{100} = \frac{3}{4}$ | 8. $\frac{90}{100} = \frac{9}{10}$ |
| 1. 1. $\frac{70}{100}$ 70 | 2. $\frac{50}{100}$ 50 | 3. $\frac{30}{100}$ 30 | 4. $\frac{25}{100}$ 25 |
| 5. $\frac{75}{100}$ 75 | 6. $\frac{45}{100}$ 45 | 7. $\frac{35}{100}$ 35 | 8. $\frac{16}{100}$ 16 |
| 9. $\frac{54}{100}$ 54 | 10. $\frac{63}{100}$ 63 | 11. $\frac{92}{100}$ 92 | 12. $\frac{79}{100}$ 79 |
| 13. $\frac{135}{1000}$ 13.5 | 14. $\frac{167}{1000}$ 16.7 | 15. $\frac{295}{1000}$ 29.5 | 16. $\frac{672}{1000}$ 67.2 |

Page No. 138

- | | | | |
|----------------------------|-------------------------|-------------------------|-------------------------|
| 1. 1. $\frac{37}{100}$.37 | 2. $\frac{49}{100}$.49 | 3. $\frac{38}{100}$.38 | 4. $\frac{65}{100}$.65 |
| 5. $\frac{72}{100}$.72 | 6. $\frac{15}{100}$.15 | 7. $\frac{40}{100}$.40 | 8. $\frac{43}{100}$.43 |
| 9. $\frac{9}{100}$.09 | 10. $\frac{6}{100}$.06 | 11. $\frac{1}{100}$.01 | 12. $\frac{3}{100}$.03 |

Page No. 139

- | | | | | |
|---------|-------|----------|-------|--------|
| 1. 1. 9 | 2. 1 | 3. 19.20 | 4. 8 | 5. 125 |
| 6. 5.12 | 7. 50 | 8. 32 | 9. 15 | |
| 2. 1. 8 | 2. 14 | 3. 45 | 4. 64 | 5. 350 |

Page No. 140

- | | | | | |
|-----------|----------|-----------|-----------|--------|
| 1. 1. 40% | 2. 5.71% | 3. 66.66% | 4. 10% | 5. 5% |
| 6. 20% | 7. 50% | 8. 20% | 9. 33.33% | |
| 2. 1. 70% | 2. 40% | 3. 10% | 4. 90% | 5. 80% |

Brain Tuner

- | | | |
|--------|--------|--------|
| 1. 50% | 2. 30% | 3. 40% |
|--------|--------|--------|

Page No. 142 MCQ - VII

- | | | | |
|---------|--------------------|--------|--------|
| 1. 0.07 | 2. 0.0206 | 3. 80% | 4. 320 |
| 5. 40 | 6. "per 100 parts" | 7. 102 | |
| 8. 272 | 9. 171 | 10. 49 | |

UNIT 10**Page No. 144**

- | | | | | |
|-----------|---------|--------|--------|---------|
| 1. 1. 3:4 | 2. 1:2 | 3. 3:2 | 4. 1:5 | 5. 3:2 |
| 6. 2:3 | 7. 2:3 | 8. 3:5 | 9. 3:4 | 10. 4:5 |
| 11. 7:1 | 12. 3:7 | | | |
| 2. 1. 5:2 | 2. 5:3 | 3. 1:2 | 4. 5:1 | |

Page No. 145

- | | | | |
|---------------------|---------------|--------|--------|
| 3. 1. 8:7 | 2. 32:7 | 3. 8:1 | 4. 4:1 |
| 5. 7:1 | 6. 7:4 | | |
| 4. 1. 400, 600, 500 | 2. 4800, 7200 | | |
| 3. 150, 250 | | | |

UNIT 11**Page No. 146**

- | | | | | |
|--------------|---------|-------|--------|--------|
| 1. 1. 156975 | 2. 6750 | 3. 36 | 4. 156 | 5. 336 |
| 6. 1035 | 7. 4050 | | | |

Page No. 147

- | | |
|--------------------------|---------------------------|
| 1. 1. 6 books for Rs 120 | 2. 5kg potatoes for Rs 55 |
| 2. 1. 14 hrs | 2. 2550 kg |
| 3. 864 km | 4. 4 days |

Page No. 149

- | | | | |
|------------------|--------------|----------------|----------------|
| 1. 1. Profit, 25 | 2. Loss, 8 | 3. Profit, 225 | 4. Loss, 35 |
| 5. Profit, 220 | 6. Loss, 24 | 7. Profit, 73 | 8. Profit, 270 |
| 9. Loss, 245 | 10. Loss, 72 | | |

2. 1. Profit, 11 2. 122 3. 360 4. Profit, 875
5. Profit, 675

Page No. 151

1. 1. 1020 2. 1158 3. 1440 4. 1400
2. 1. 13080 2. 13100 3. 13000 4. 24000
3. 1. 17,750 2. 5840 3. 1810 4. 3135 5. 3200

Page No. 152

1. 1. Profit – 25; 6.25% 2. Profit – 55; 10%
3. Loss – 48; 6% 4. Loss – 42; 12%
5. Profit – 48; 6% 6. Loss – 500; 20%
7. Profit – 70; 5% 8. Loss – 50000; 25%

Page No. 153

2. 1. 5% 2. 10% 3. 10% 4. 5% 5. 5%

Page No. 154

1. 1. 28 2. 56 3. 430.50 4. 5175 5. 8325.60
2. 1. 3 2. 11.30 3. 75 4. 3.75 5. 1860
3. 1. 500 2. 335 3. 54.50 4. 579.50 5. 8900

Page No. 155

1. 1. 150 2. 150 3. 68 4. 64 5. 126
6. 1152 7. 3600 8. 3456 9. 375 10. 10000

Page No. 156 MCQ - VIII

1. 12 2. 6:7 3. Rs 565 4. Rs 1450
5. 4% 6. Rs 50 6. Rs 824 8. Rs 75

UNIT 12

Page No. 159

1. 1. 06:20 2. 14:35 3. 11:55 4. 15:45 5. 07:00
6. 21:10 7. 12:50 8. 22:20 9. 17:00 10. 17:20
11. 23:30 12. 13:40 13. 22:00 14. 16:50 15. 20:15
16. 19:30
2. 1. 1:10p.m. 2. 6:20p.m. 3. 2:15p.m. 4. 7:45p.m.
5. 5:40p.m. 6. 4:30p.m. 7. 11:30p.m. 8. 3:40p.m.
9. 10:10p.m. 10. 8:45p.m. 11. 8:40p.m. 12. 00:15p.m.
3. 1. 4a.m. 2. 10:15a.m. 3. 10p.m. 4. 12:30p.m. 5. 8:55p.m. 6. 11:59p.m.
7. 9:47p.m. 8. 01:10a.m. 9. 1:09p.m. 10. 6p.m. 11. 11a.m. 12. :35a.m.
4. 1. 9:35 2. 00:00 3. 13:50 4. 05:55 5. 21:30 6. 19:20
5. 2. 9:45 p.m.; 21:45 hrs 3. 7:40 p.m.; 19:40 hrs
4. 8:50 a.m.; 08:50 hrs 5. 2:50 p.m.; 14:50 hrs

6. 1. 2:20 p.m. 2. 18:40 hrs

Page No. 160

1. 1. 111 2. 186 3. 163 4. 90 5. 186 6. 191
7. 49

Page No. 162

1. 1. 25 2. 47 3. 66 4. 37 5. 20 6. 35
2. 1. 1257 2. 831 3. 644 4. 1763 5. 2198 6. 1044
3. 1. 515 2. 580 3. 445 4. 355 5. 255 6. 190
4. 1. 18925 2. 16550 3. 26740 4. 33917 5. 31225 6. 12045
1. 1. 5 weeks 5 days 2. 11 hrs 14 min. 3. 6 weeks 3 days
4. 14 hrs 56 min. 5. 4 weeks 2 days 6. 9 hrs 7 min.
7. 9 weeks 3 days 8. 61 hrs 14 min. 9. 14 days 14 hrs
10. 16 min. 48 sec. 11. 20 days 20 hrs 12. 2 hrs 35 min. 45 sec.
13. 27 days 7 hrs 14. 2 hrs 25 min. 15. 18 days 20 hrs

Page No. 163

1. 1. 21 5 15 2. 25 2 15 3. 23 59 8 4. 28 55 13

Page No. 164

2. 1. 4 4 20 2. 4 4 18 3. 2 4 4. 5 4
1. 1. 4 hrs 20 min. 2. 7 hrs 45 min. 3. 9 hrs 50 min. 4. 6 hrs 40 min.
5. 5 hrs 10 min. 6. 4 hrs 40 min. 7. 10 hrs 15 min. 8. 2 hrs 50 min.
9. 5 hrs 40 min. 10. 4 hrs 50 min.

Page No. 165 MCQ - IX

1. 13:00 hours 2. 10 3. 100 4. 168
5. 4 hrs 38 min. 6. 12:01 p.m. 7. 400 8. 135 hrs
9. 15 10. 14 hours 42 minutes

UNIT 13

Page No. 167

1. 2. 48 3. 148 4. 340 5. 400 6. 500

Page No. 168

2. 2. 86 3. 220 4. 120 5. 74 6. 148
3. 1. 12cm 2. 14cm 3. 11cm
4. 1. 352cm 2. 290cm 3. 96m 4. 740m 5. Rs 15000

Page No. 169

1. 1. 6 2. 7 3. 8
2. 1. 8 2. 8 3. 6

Page No. 171

1. 1. 25sq.cm 2. 49sq.cm 3. 121sq.cm 4. 225sq.cm
5. 81sq.cm 6. 289sq.cm 7. 1225sq.cm 8. 625sq.cm

9. 2500 sq.cm 10. 100 sq.cm 11. 3600 sq.cm 12. 10000 sq.cm
2. 1. 1225 sq.cm 2. 3025 sq.cm 3. 576 sq.m 4. 2000 sq.m
5. 720000 sq.cm
3. 1. 54 sq.cm 2. 108 sq.cm 3. 150 sq.cm 4. 400 sq.cm
5. 48 sq.m 6. 300 sq.m 7. 1200 sq.m 8. 3375 sq.m
9. 5940 sq.m
4. 1. 4730 sq.cm 2. 300 sq.m 3. 24200 sq.cm 4. 3196 sq.m
5. 150 sq.m

Page No. 172

1. 1. Rs 20250 2. 100000 sq.cm
3. 25 m sq. plots 4. Rs 12656.25
5. 150 sq.m; Rs 6825 6. 3222
7. Rs 191100 8. 5513

Page No. 173

1. 1. 9 2. 6 3. 5 4. 35
5. 19 6. 45 7. 35 8. 36

Page No. 174

1. 1. 4 sq.cm 2. 4 sq.cm 3. 2 sq.cm 4. 4 sq.cm
5. 6 sq.cm 6. 6 sq.cm 7. 6 sq.cm 8. 5 sq.cm
9. 24 sq.cm

Page No. 175

1. 1. 10 sq.cm 2. 11 sq.cm 3. 7 sq.cm
4. 4 sq.cm 5. 11 sq.cm 6. 6 sq.cm

UNIT 14

Page No. 177

1. 1. smallest 3. biggest

Page No. 178

1. 1. 2 2. 6 3. 12 4. 15
2. 1. 12 cubes 2. 16 cubes 3. 28 cubes 4. 36 cubes
5. 11 cubes 6. 9 cubes 7. 18 cubes 8. 18 cubes

Page No. 179

3. 1. No 2. Yes 3. Yes 4. No
4. B

Page No. 181

1. 1. 12 cu.cm 2. 18 cu.cm 3. 10 cu.cm 4. 8 cu.cm
2. 1. 20 2. 20 3. 20 cu.cm

- | | | |
|---------|-------|-------------|
| 3. 1. 6 | 2. 12 | 3. 12 cu.cm |
|---------|-------|-------------|

Page No. 183

- | | | |
|-----------------|-------------|--------------|
| 1. 1. 240 cu.cm | 2. 32 cu.cm | 3. 343 cu.cm |
|-----------------|-------------|--------------|

Page No. 184

- | | | |
|-------------------|------------------|------------------|
| 2. 1. 1440 cu.cm | 2. 2880 cu.cm | 3. 390 cu.cm |
| 4. 1802.625 cu.cm | 5. 556.875 cu.cm | 6. 310 cu.cm |
| 3. 1. 2744 cu.cm | 2. 15625 cu.cm | 3. 91.125 cu.cm |
| 4. 1 cu.cm | 5. 1.728 cu.cm | 6. 274.625 cu.cm |
| 4. 1. 1050 cu.cm | 2. 343 cu.cm | 3. 528 cu.cm |
| 4. 499.125 cu.cm | 5. 1920 bricks | |

Page No. 186 MCQ - X

- | | | | |
|---------|---------------|----------|-------------|
| 1. 9 cm | 2. 16 cm | 3. 31 cm | 4. 588sq.cm |
| 5. 16 | 6. 60 cm | 7. 800 | 8. 11 m |
| 9. 36 | 10. 600 cu.cm | | |

UNIT 15

Page No. 190

1. 1. a line has no end points but a ray has only one end point.
2. a line and a ray does not have a definite length.
3. a ray does not a definite length but a line segment has a definite length and a ray has only line end point while a line segment has two end points.
4. both are straight.
5. plane has flat surface but line has not any flat surface.
4. Line segment LM, MN, NP, LP, MP, LN
5. Ray ST and Ray SR

Page No. 191

1. 1. (i), (iv)

Page No. 192

- | | | |
|-----------------|--------|--------|
| 2. angles | vertex | arms |
| 1. $\angle PQR$ | Q | QP, QR |
| 2. $\angle RST$ | S | SR, ST |
| 3. $\angle XYZ$ | Y | YX, YZ |
| 4. $\angle AOB$ | O | OA, OB |
| 5. $\angle MON$ | O | OM, ON |

3. $\angle ROS$, $\angle SOT$, $\angle TOU$, $\angle ROT$, $\angle SOU$, $\angle ROU$
4. 1. line NP, line PN
2. Rays OQ, OR, ON, OP
3. $\angle NOQ$, $\angle NOR$, $\angle ROQ$, $\angle POQ$, $\angle NOP$

Page No. 193

1. 1. 180° 2. Protractor
3. 180 equal subdivisions 4. 1°

Page No. 194

2. 1. 80° 2. 45° 3. 120° 4. 110°
5. 90° 6. 140°

Page No. 195

1. 1. acute 2. obtuse 3. right 4. obtuse 5. obtuse
6. obtuse 7. straight 8. acute 9. acute 10. obtuse
2. 1. acute 2. obtuse 3. acute 4. straight
5. right 6. obtuse

Page No. 196

3. 1. right 2. straight 3. acute 4. obtuse
4. 1. acute 2. straight 4. obtuse 4. right
5. 1. $\angle COB$, $\angle DOE$, $\angle AOB$
2. $\angle DOB$, $\angle COE$, $\angle AOE$
3. $\angle EOB$, $\angle DOC$

Page No. 198

2. 1. 155° 2. 65°

Brain Tuner

90° angle

Page No. 201

1. 1. yes 2. no 3. yes 4. no
2. 1. ✓ 3. ✓ 4. ✓
3. 1. false 2. false 3. true 4. true
4. 1. Netaji Marg
2. Safdarjang Road, Shanti Path, Link Road
3. Link Road
4. Safdarjang Road, Shanti Path, Link Road
5. Prithvi Raj Road, Between Netaji Marg and Prithvi Raj Road

Page No. 207

1. 1. true 2. false 3. true 4. false 5. true
6. true 7. false
2. 1. closed 2. longest 3. equal 4. centre
5. two 6. chord

Page No. 208

5. 1. AO, OB, DO, OC 2. AB, CD 3. DB, CB
6. a. AO, OE, HO, GO, OC, FO, OB
b. AOE, HOD, GOC c. AB, FE
7. AB, BC, CD, DA, Chords = 6, Diameters = 2, AC, DB
8. 1. 5 cm 2. 7 cm 3. 16 cm 4. 21.5 cm 5. 25.5 cm
6. 32.5 cm 7. 53.5 cm 8. 64 cm
9. 1. 8 cm 2. 14 cm 3. 26 mm 4. 5 cm 5. 12.4 m
6. 1 m 7. 50 mm 8. 19 cm
10. 1. 6 cm 2. 33 cm 3. 16.34 cm 4. 25.14 cm 5. 332.57 cm
6. 29.54 cm

Page No. 211

1. 1. $\triangle PQR$ 2. PQ, QR, RP
3. $\angle P$, $\angle Q$, $\angle R$ 4. P, Q, R
2. $\triangle NST$, $\triangle RSM$, $\triangle RST$, $\triangle STO$, $\triangle RST$, $\triangle TOU$, $\triangle ROU$, $\triangle TRU$,
 $\triangle TUP$, $\triangle RQU$, $\triangle SPQ$, $\triangle SQU$, $\triangle SPU$, $\triangle NRT$, $\triangle MRT$, $\triangle SOR$

Page No. 214

1. 1. true 2. true 3. false 4. false
5. true 6. true
2. 1. triangle 2. vertices 3. equal 4. right 5. two
3. 1. Scalene 2. Right angled 3. Acute angled
4. Obtuse angled 5. Equilateral

Page No. 215

4. 1. one 2. three 3. right angled
5. 1. equilateral 2. isosceles 3. scalene 4. scalene
6. 1. isosceles 2. scalene 3. equilateral 4. isosceles
7. 1. right angled 2. acute angled
3. obtuse angled 4. acute angled
8. 1. right angled 2. obtuse angled
3. acute angled

Page No. 218

1. 1. yes 2. no 3. no 4. no
 5. yes 6. no
 2. 1. 60° 2. 70° 3. 40° 4. 60°
 5. 25° 6. 62°

Brain Tuner

 45° **Page No. 219 MCQ - XI**

1. 105° 2. 91° , 65° , 24° 3. $\overleftrightarrow{AB}$
 4. an acute 5. 4.5 6. 90° 7. a line segment
 8. 100° 9. a chord 10. isosceles

UNIT 16**Page No. 220**

1. 1. ✓ 3. ✓

Page No. 221

1. 1. ✓ 3. ✓

Page No. 222

1. 2. ✓ 3. ✓ 2. 1. yes 2. Yes 3. No

Page No. 223

1. 1. ✓ 2. ✓ 3. ✗ 4. ✓

UNIT 17**Page No. 228**

2. 20 3. 25 4. 20 5. 10 6. 5
 7. 25 8. 45 9. 95

Page No. 229

1. 20 2. Grade B 3. Grade E 4. 62 students

Page No. 230

Students participated in Sports Day	
100 metre race	△ △ △ △
50 metre race	△ △ △ △ △ △
Frog race	△ △
Spoon & Lime race	△
High Jump	△ △ △

Animals in the farm house	
Cows	⊗ ⊗ ⊗ ⊗ ^
Goats	⊗ ⊗ ⊗ ⊗ ⊗ ⊗ ⊗ ⊗
Pigs	⊗ ⊗ ⊗ ^
Hens	⊗ ⊗ ⊗ ⊗ ⊗ ⊗ ⊗ ⊗ ⊗ ⊗
Horses	⊗

Meals	
Burgers	□ □ □ □ □
Pizza	□ □ □ □
Dosa	□ □ □ □ □ □
Idli	□ □ □ □ □ □ □
Noodles	□ □ □

1. Noodles 2. Idli 3. 8

Page No. 231

4. 1. 900 2. 1200 3. 200 4. Horror 5. Cartoon
 5. 1. Saturday 2. Friday 3. 1675

Page No. 234

2. 1. Class V 2. Class II 3. 15 students
 4. 5 students 5. 200 students
 3. 1. Monday 2. Saturday 3. 40 4. 40 5. 370

Page No. 235 Model Test Paper

1. 1. 42 2. 23557cm 3. 6.05 4. $\frac{1}{10}$
 5. acute angled
 2. 1. 7:45 p.m. 2. 5:40 p.m. 3. 4:30 p.m.
 3. 14 hrs 56 min. 4. $7\frac{11}{12}$
 5. 1. 11% 2. 69% 3. 37% 4. 69%
 6. 30%
 7. 400, 600, 500
 8. 1. LXIX 2. LXXII 3. LXXXVIII
 4. XC 5. XCIX 6. XLII
 9. 1. 32 2. 19.2
 10. 36 12. 462304, 135912, 365200
 13. 647.32 14. 150sq.cm 15. 9744
 16. 1. $\angle COB$, $\angle DOE$, $\angle AOB$

2. $\angle DOB$, $\angle COE$, $\angle AOE$
3. $\angle EOB$, $\angle DOC$
17. 31.5 18. 1. 9 cu.cm 2. 16 cu.cm
19. 49l 840 ml 20. 620
21. 1. 48.29 2. 7.68 3. 5.21
4. 22.03 5. 50.01
22. 1860
23. half dozen socks for Rs 132
24. Q 1435; R 24
27. 240 cu.cm
28. P _____ Q
R _____ S
29. 1. August
2. 2100
3. May and October
4. November
30. 1. 16579km 136m 2. 10%
3. 455.625 cu.cm 4. 36 kg