SHIROMANI INSTITUTE

NUMBER SYSTEM

1. The product of the place values of two 2's in 428721 is
(a) 4 (b) 40000
(c) 400000 (d) 40000000

2. The greatest number which on rounding off to nearest thousands gives 5000, is
(a) 5001 (b) 5559
(c) 5999 (d) 5499

3. How many times the digit "3" appears in numbers from 1 to 100 ?
(a) 18 (b) 19 (c) 20 (d) 21

4. How many numbers are there containing 2 digits ?
(a) 90 (b) 99 (c) 100 (d) 89

5. How many times does the digit '1' appear in numbers from 1 to 100
(a) 18 (b) 19 (c) 20 (d) 21

6. Sum of the greatest 8 digit number and the smallest 9 digit number
(a) 19999999 (b) 199999999
(c) 999999999 (d) 10000999

7. The whole number which does not have a predecessor is
(a) 100 (b) 0 (c) 1 (d) 9

8. Successor of 301,999 is _____
(a) 30, 200 (b) 302,000
(c) 302,010 (d) 301,100

9. The least whole number is _____
(a) 1 (b) 10 (c) 0 (d) None

10. The least natural number is ____
(a) 0 (b) 1 (c) 9 (d) None

11. What least number should be added to 1330 to get a number exactly divisible by 43?
(a) 46 (b) 1 (c) 3 (d) 7

12. The number which is neither prime nor composite is
(a) 0 (b) 1 (c) 2 (d) 5

13. Successor of every even number is
(a) Even (b) Prime
(c) Odd (d) None

14. The product of two odd numbers is
(a) An even number
(b) An odd number
(c) Cannot be determined
(d) None

15. The product of two even numbers is
(a) An even number
(b) An odd number
(c) Cannot be determined
(d) None

16. Least prime number is
(a) 1 (b) 0 (c) 2 (d) 3

17. The sum of the prime numbers between 90 and 100 is
(a) 188 (b) 281 (c) 376 (d) 97

18. The number which is neither positive nor negative is
(a) 1 (b) 5 (c) 0 (d) 10

19. Smallest negative number
(a) – 1 (b) – 10 (c) 0 (d) None

20. The only prime number which is even is
(a) 2 (b) 4 (c) 6 (d) None

21. How many prime numbers are there between 1 and 100

(a) 21 (b) 25 (c) 23 (d) 27

22. A prime number has factors

(a) 1 (b) 2 (c) 3 (d) 0

23. A composite number has factors

(a) 0 (b) 2

(c) 3 (d) more than 2

24. Which of the following is not a composite number?

(a) 4 (b) 6 (c) 7 (d) 8

25. Which digit in the number 568731 has a place value of thousands?

(a) 8 (b) 7 (c) 6 (d) 5

26. 20985 rounded off to the nearest ten is

(a) 20000 (b) 20900

(c) 20990 (d) 21000

27. Raj earns Rs. 3500. If he spent Rs.1249 on buying a headphone, what is the balance of his salary?

(a) ₹ 2,751 (b) ₹ 2151

(c) ₹ 2,251 (d) ₹ 2,059

28. In an examination, Jessy's score was 92. Nissi obtained 15 marks less than Jessy. Rishi scored 4 marks more than Nissi. What is the difference between Jessy's and Rishi's scores?

(a) 11 (b) 19 (c) 73 (d) 77

29. The relation of which of the given series is such that the numbers are the squares of the prime numbers?

(a) 4, 6, 9, 13....

(b) 4, 9, 25, 81....

(c) 4, 9, 25, 49,121...

(d) None of these

30. 994 can be written in the Roman numeral as :

(a) CMXCIV (b) CMCXIV

(c) CMXCVI (d) CMCXVI

31. The smallest number which must be subtracted from 8112 to make it exactly divisible by 99?

(a) 91 (b) 92

(c) 93 (d) 95

32. The sum of two numbers is 22. Five times one number is equal to 6 times the other. The larger of the two numbers is

(a) 10 (b) 12

(c) 15 (d) 16

33. The sum of the first four prime number is

(a) 11 (b) 17

(c) 26 (d) 16

34. A number 59261 is divided to by 2. What is the largest possible value of?

(a) 9 (b) 8

(c) 0 (d) 2

35. Which is the smallest of 5-digit number that is exactly divisible by 13?

(a) 10001 (b) 10010

(c) 10009 (d) 10100

36. When a number is divided by 7, the remainder is K. How many possible values can K have?

(a) 7 (b) 8 (c) 6 (d) 5

37. If n is a prime number between 40 and 50, how many different values n can have?

(a) 1 (b) 2 (c) 3 (d) 4

38. What is the numeral for the following in the international system?
Five hundred four million eight hundred seven thousand three hundred nineteen
(a) 504,817,319 (b) 504,807,309
(c) 504,817,309 (d) 504,807,319

39. What is the numeral for the following in the Hindu- Arabic system Seventy crore thirty three lakh four thousand two hundred nine.
(a) 70,33,40,209 (b) 70,33,04,219
(c) 70,33,40,219 (d) 70,33,04,209

40. If a, b, c are the digits of a number beginning from the left, the number is abc
(a) a + 10b + 100c
(b) 10 a + b + 100c
(c) 100 a + 10 b + c
(d) None

41. VIII + XII + L = ?
(a) 70 (b) 80
(c) 60 (d) 72

42. What is the sum of the place value and the face value of 5 in 2526
(a) 5005 (b) 50005
(c) 505 (d) 55

43. What is the difference between the place values of 8 and 6 in the number 382631
(a) 79400 (b) 79600
(c) 80600 (d) 78400

44. In a question of division if divisor is 51, quotient is 16 and remainder 27, then the dividend will be?
(a) 843 (b) 483 (c) 94 (d) 1393

45. In a division sum, the divisor is 10 times the quotient and 5 times the remainder. If the remainder is 40, then the dividend is
(a) 4080 (b) 4060 (c) 4040 (d) 4020

46. Which of the following numbers is divisible by 3
(a) 452 (b) 605 (c) 342 (d) 332

47. Which of the following numbers is divisible by 9?
(a) 8230 (b) 6620 (c) 9240 (d) 1080

48. Which one is divisible by 8
(a) 6430 (b) 9522 (c) 4048 (d) 6330

49. Which one is divisible by 5 ?
(a) 542 (b) 604 (c) 205 (d) 644

50. Which of the following numbers is divisible by 6
(a) 721 (b) 620 (c) 832 (d) 834

51. Which one is completely divisible by 10
(a) 258 (b) 530 (c) 884 (d) 906

52. Which one of the following numbers is divisible by 11?
(a) 3960 (b) 1344 (c) 1008 (d) 5184

53. 6721 is divisible by ?
(a) 5 (b) 11 (c) 7 (d) 3

54. Find the difference between largest 5-digit number and smallest 4-digit number?
(a) 98998 (b) 98991
(c) 98999 (d) 99899

55. Form the greatest 6-digit numeral by repeating any two digits from 7,9,5,4
(a) 977554 (b) 997554
(c) 997754 (d) 975544

56. **There are only_____symbols in the Roman numerals**
(a) 9 (b) 6 (c) 7 (d) 8

57. **The predecessor of the smallest 8 digit number**
(a) 99999999 (b) 10000001
(c) 999999 (d) 9999999

58. **In 75897, the place value of 8 is**
(a) 8 (b) 800
(c) 8000 (d) 100

59. **The Hindu-Arabic numerals for M, D, C and L respectively are**
(a) 500, 1000, 100, 50
(b) 1000, 50, 500, 100
(c) 1000, 500, 100, 50
(d) 500, 1000, 50, 100

60. **The difference between the greatest and the smallest 4-digit numbers formed with the digits 9, 3, 7 and 1 is**
(a) 8342 (b) 8352
(c) 8362 (d) 8372

61. **Find the sum of the largest and the smallest numbers which can be formed by 5, 0, 7 and 4**
(a) 11487 (b) 11797
(c) 11687 (d) 11597

62. **The smallest five-digit numbers using 5, 0, 3, 7 and 4 is**
(a) 03457 (b) 34570
(c) 30547 (d) 30457

63. **Write the following Roman numeral in the Hindu-Arabic numeral MMCCCXIV**
(a) 2214 (b) 2324 (c) 2314 (d) 2316

64. **Write the following Roman numeral in the Hindu-Arabic numeral DCCLXXVII**
(a) 777 (b) 767 (c) 787 (d) 768

65. **Arrange the following numbers in the descending order 42059, 40259, 40529, 40592, 42952**
(a) 40259,40529,40592,42059,42952
(b) 42952,42059,40529,40592,40259
(c) 42952,42059,40592,40529,40259
(d) 42952,40592,40529,42059,40259

66. **Write 95 in the Roman numeral**
(a) CXV (b) XCV (c) XCIV (d) XCVI

67. **Add the difference and the sum of the largest and the smallest 6-digit number**
(a) 1998888 (b) 1999888
(c) 1999998 (d) 1999999

68. **The difference between the place values of 6 and 4 in 868594327**
(a) 59996000 (b) 58886000
(c) 69996000 (d) 59986000

69. **Find the difference between the greatest and the least number that can be written using the digits 6, 2, 7, 4, 3 each only once**
(a) 52965 (b) 53965
(c) 52956 (d) 52659

70. **The product of a non-zero whole number and its successor is always**
(a) Divisible by 3
(b) An odd number
(c) A prime number
(d) An even number

71. **Write Roman numeral CDXXXIX in the Hindu-Arabic numeral**
(a) 439 (b) 449 (c) 529 (d) 539

72. **If 90.0675 is divided by 1.5, then the quotient is**
(a) 6.0045 (b) 6.0450
(c) 60.045 (d) 0.6045

73. I am a prime number. If you subtract 2 from me, I become divisible by 7
(a) 29 (b) 19 (c) 31 (d) 23

74. In Roman numeration, if a symbol is repeated, its value is not multiplied as many times as it occurs.
(a) True (b) False
(c) Cannot Say (d) Both equal

75. Which of the following numbers in Roman Numerals is incorrect?
(a) LXII (b) XCI (c) LC (d) XLIV

76. On dividing 2272 as well as 875 by a 3-digit numbers N, we get the same remainder. The sum of the digits of N is
(a) 10 (b) 11 (c) 12 (d) 13

77. The successor of 1 million is
(a) 2 million (b) 1000001
(c) 100001 (d) 10001

78. The face value of 4 in the number 43861 is
(a) 40000 (b) 4
(c) 10000 (d) None of these

79. The difference between the greatest 6 digit number and the greatest 4 digit number is
(a) 990000 (b) 998000
(c) 998000 (d) 980000

80. How many numbers are there containing 3 digits?
(a) 899 (b) 900
(c) 901 (d) None of these

81. If p is the successor of q and r is the predecessor of q, then which of the following is correct?
(a) $r - p = 2$ (b) $r + p = 2$
(c) $r - p = -2$ (d) $r + p = -2$

82. What is the number name of the following numeral in the Hindu-Arabic system? "70030078"
(a) Seven crore three lakh seventy eight
(b) Seventy lakh thirty thousand seventy eight
(c) Seven crore three thousand seventy eight
(d) Seven crore thirty thousand seventy eight

83. If P is an odd number, then which of the following is true?
(a) (5P + 4) is an odd number
(b) (2P + 6) is an odd number
(c) (5P + 7) is an odd number
(d) (6P + 4) is an odd number

84. If X and Y are both odd numbers, then which of the following is an even number?
(a) XY + 2 (b) X + Y
(c) X + Y + 1 (d) XY

85. Which one of the following is the correct sequence in respect of the Roman numerals?
(a) C > D > L > M (b) M > L > D > C
(c) M > D > C > L (d) L > C > D > M

86. The numeral used for DCCXXXVII in the Hindu-Arabic system is
(a) 727 (b) 728
(c) 737 (d) 738

87. Which of the are twin prime number ?
(a) (5, 7) (b) (18, 25)
(c) (11, 17) (d) (23, 29)

88. Which of the numbers are co-prime?
(a) (14, 35) (b) (18, 25)
(c) (15, 25) (d) (23, 69)

89. Write 98 in Roman numbers.
(a) XCVIII (b) XCVVI
(c) XCVII (d) XCVIV

90. Two prime numbers between 35 and 43 are
(a) 37, 43 (b) 38, 41
(c) 37, 41 (d) 39, 41

91. The Roman numeral of 94 is:
(a) XCV (b) XCVI
(c) XCIV (d) XCIII

92. The sum of first eight prime Numbers is
(a) 76 (b) 78 (c) 77 (d) 79

93. The sum of the smallest even and the smallest odd prime number is
(a) Composite number
(b) An even number
(c) An odd number
(d) None of these

94. Write 96 in Roman numerals.
(a) XCVI (b) DCVVI
(c) DCVIII (d) XCVIV

95. Find the sum of all numbers less than 27 which are divisible by 9 ?
(a) 18 (b) 54 (c) 27 (d) 36

96. Which one of the following number is divisible by 3 ?
(a) 8003 (b) 6896 (c) 4878 (d) 2690

97. The even prime number is :
(a) 2 (b) 6 (c) 4 (d) 8

98. The smallest natural number is:
(a) 0 (b) -1 (c) 2 (d) 1

99. Sum of all prime numbers between 10 & 25 is:
(a) 72 (b) 83 (c) 66 (d) 93

100. Which of the following is the correct representation of number 99
(a) IC (b) XCVIIII
(c) XCIX (d) L + XXXXXIX

101. Find the value of MLXII + CXIV – LXIII
(a) MCLXXIII
(b) MCCCCXXIXX
(c) MCCLXXIII
(d) MXCIII

102. Subtract 28576 from the sum of the least and the greatest 5 digit number formed using the digits 3,0,5,8 and 1.
(a) 67092 (b) 84653
(c) 68932 (d) 736951

103. Find the smallest five digit number using three different digits.
(a) 10000 (b) 20000
(c) 00021 (d) 10002

104. If a number is divisible by 8 and 3 both, then by which other number it will be divisible ?
(a) 8 and its factors (b) factor of 3
(c) factor of 24 (d) factor of 12

105. Which of the following are four consecutive composite numbers ?
(a) 22,23,24,25 (b) 60,61,62,63
(c) 56,57,58,59 (d) 90,91,92,93

106. A pair of twin prime numbers between 70 and 100 is
(a) 71, 73 (b) 79, 83
(c) 97, 99 (d) 87, 89

107. There are XC students in class 8th, XL students are absent today How many students are present (in numerals) ?
(a) L (b) XL (c) LX (d) X

108. The roman numerals of 67 is

(a) XLVII (b) LXVII (c) XXVII (d) DXVII

109. The smallest number of 5 digit formed with the digits 3, 0, 8, 4 and 1

(a) 10843 (b) 10834

(c) 10348 (d) 18034

110. All natural numbers and 0 are called numbers.

(a) Rational (b) Integers

(c) Whole (d) Prime

111. Find the difference between 5 digits greatest and 5 digit smallest number with different digit

(a) 41976 (b) 88531

(c) 98531 (d) 89999

112. In which of the following numbers only one prime number lie

(a) 40 and 50 (b) 60 and 70

(c) 80 and 90 (d) 90 and 100

113. Using the different digits, find the smallest number of 4 digits in which 9 is at tens place.

(a) 1290 (b) 1092

(c) 2091 (d) 2190

114. Which is the smallest 5 digit number formed by the digits 5, 1, 6 when two digits can be used twice?

(a) 11565 (b) 51156

(c) 11556 (d) 11655

115. Which of the following is correct ?

(a) zero is an odd number

(b) zero is an even number

(c) zero is a prime number

(d) zero is neither odd nor even

116. What is the difference between the greatest 7 digit number and the smallest 5 digit number

(a) 9990999

(b) 9993999

(c) 9996999

(d) 9989999

117. What is the difference between the greatest 6 digit number and the greatest 5 digit number ?

(a) 100000 (b) 100001

(c) 99999 (d) 900000

118. Numeral for two lakh two thousand is

(a) 20200 (b) 200200

(c) 202000 (d) 22000

ANSWER-KEY											
1	(C)	**21**	(B)	**41**	(A)	**61**	(D)	**81**	(C)	**101**	(D)
2	(D)	**22**	(A)	**42**	(C)	**62**	(D)	**82**	(D)	**102**	(A)
3	(C)	**23**	(D)	**43**	(A)	**63**	(C)	**83**	(A)	**103**	(D)
4	(A)	**24**	(C)	**44**	(A)	**64**	(A)	**84**	(B)	**104**	(C)
5	(D)	**25**	(A)	**45**	(C)	**65**	(C)	**85**	(C)	**105**	(D)
6	(B)	**26**	(C)	**46**	(C)	**66**	(B)	**86**	(C)	**106**	(A)
7	(B)	**27**	(C)	**47**	(D)	**67**	(C)	**87**	(A)	**107**	(A)
8	(B)	**28**	(A)	**48**	(C)	**68**	(A)	**88**	(B)	**108**	(B)
9	(C)	**29**	(C)	**49**	(C)	**69**	(A)	**89**	(A)	**109**	(C)
10	(B)	**30**	(A)	**50**	(D)	**70**	(D)	**90**	(C)	**110**	(C)
11	(C)	**31**	(C)	**51**	(B)	**71**	(A)	**91**	(C)	**111**	(A)
12	(B)	**32**	(B)	**52**	(A)	**72**	(C)	**92**	(C)	**112**	(D)
13	(C)	**33**	(B)	**53**	(B)	**73**	(D)	**93**	(C)	**113**	(B)
14	(A)	**34**	(B)	**54**	(C)	**74**	(A)	**94**	(A)	**114**	(C)
15	(A)	**35**	(B)	**55**	(C)	**75**	(C)	**95**	(C)	**115**	(D)
16	(C)	**36**	(C)	**56**	(C)	**76**	(B)	**96**	(C)	**116**	(D)
17	(D)	**37**	(C)	**57**	(D)	**77**	(B)	**97**	(A)	**117**	(D)
18	(C)	**38**	(D)	**58**	(B)	**78**	(B)	**98**	(D)	**118**	(C)
19	(A)	**39**	(D)	**59**	(C)	**79**	(A)	**99**	(B)		
20	(A)	**40**	(C)	**60**	(B)	**80**	(B)	**100**	(C)		

1. **The factor of 60 are**
   (a) 1, 2, 5, 10, 15, 60
   (b) 1, 2, 4, 5, 6, 10, 15, 60
   (c) 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60
   (d) 1, 2, 3, 20, 30, 60

2. **The factor of 50 are**
   (a) 1, 2, 5, 10, 25, 50
   (b) 1, 2, 4, 5, 10, 25, 50
   (c) 1, 2, 3, 5, 25, 50
   (d) 1, 2, 5, 10, 20, 50

3. **What is the smallest factor of 45.**
   (a) 1 (b) 2 (c) 3 (d) 5

4. **What is the largest factor of 60.**
   (a) 20 (b) 30 (c) 60 (d) 120

5. **What is the difference of largest and smallest factor of 35.**
   (a) 33 (b) 32 (c) 34 (d) 35

6. **What is the sum of largest and smallest factor of 75.**
   (a) 75 (b) 76 (c) 77 (d) 74

7. **What is the product of largest and smallest factor of 95.**
   (a) 90 (b) 94 (c) 96 (d) 95

8. **Find the prime factorization of 90.**
   (a) 2 × 3 × 5 (b) 2 × 3^2 × 5
   (c) 2^2 × 3^2 × 5 (d) 2^3 × 3 × 5

9. **Find the prime factorization of 231.**
   (a) 3 × 7 × 11 (b) 3 × 11 × 13
   (c) 3 × 7 × 13 (d) 3 × 7 × 17

10. **Write the prime factorization of 1331.**
    (a) 11 × 11 × 11 (b) 11 × 13 × 13
    (c) 13 × 11 × 11 (d) 13 × 13 × 13

11. **Find total number of factors of 60.**
    (a) 10 (b) 8 (c) 12 (d) 14

12. **Find total number of factors of 80.**
    (a) 10 (b) 8 (c) 12 (d) 14

13. **Find total number of prime factors of 21.**
    (a) 4 (b) 6 (c) 2 (d) 5

14. **Find total number of prime factors of 90.**
    (a) 2 (b) 3 (c) 4 (d) 5

15. **Write down first 5 multiples of 7.**
    (a) 7, 14, 21, 28, 42
    (b) 7, 14, 21, 28, 35
    (c) 14, 28, 42, 56, 63
    (d) 7, 8, 9, 10, 11

16. **What is the smallest multiple of 6.**
    (a) 1 (b) 6 (c) 12 (d) 0

17. **What is the sum of first 5 multiples of 11.**
    (a) 110 (b) 55 (c) 165 (d) 120

18. **What is the sum of first 5 multiples of 2 & 3.**
    (a) 30 (b) 45 (c) 75 (d) 90

19. **What is the sum of third and eighth multiple of 13.**
    (a) 39 (b) 104 (c) 143 (d) 163

20. **What is the difference of fifth and second multiple of 16.**
    (a) 80
    (b) 32
    (c) 48
    (d) 64

21. What is the product of seventh and the fourteenth multiple of 15.

(a) 21080 (b) 21960

(c) 22150 (d) 22050

22. What is the prime factorization of 36036.

(a) 2^2 X 3^3 X 〖11〗 ^2 X 13

(b) 2^2 X 3^2 X 7 X 11 X 13

(c) 2^2 X 3^2 X 11 X 13

(d) 2^2 X 3^2 X 7^2 X 11 X 13

23. 20 a _____ of 120.

(a) Factor (b) Prime Factor

(c) Multiple (d) Product

24. What is smallest prime number.

(a) 0 (b) 1

(c) 2 (d) 3

25. Find the first four common multiples of 5, 2 and 3.

(a) 10, 20, 30, 40 (b) 15, 30, 45, 60

(c) 30, 60, 90, 120 (d) 40, 80, 120, 60

26. Which factors are common between 4, 6 & 12.

(a) 1 (b) 2,3

(c) 1,2 (d) 1,2,3

27. How many prime numbers are there between 40 & 70 ?

(a) 6 (b) 7 (c) 5 (d) 8

28. How many total number of prime factors of 56.

(a) 2 (b) 3 (c) 5 (d) 4

29. What is the unit place digit of the sum of all the factors of 96.

(a) 0 (b) 1 (c) 2 (d) 3

ANSWER-KEY													
1.	(C)	**2.**	(A)	**3.**	(A)	**4.**	(C)	**5.**	(C)	**6.**	(B)	**7.**	(D)
8.	(B)	**9.**	(A)	**10.**	(A)	**11.**	(C)	**12.**	(A)	**13.**	(C)	**14.**	(C)
15.	(B)	**16.**	(B)	**17.**	(C)	**18.**	(C)	**19.**	(C)	**20.**	(C)	**21.**	(D)
22.	(B)	**23.**	(A)	**24.**	(C)	**25.**	(C)	**26.**	(C)	**27.**	(B)	**28.**	(D)
29.	(C)												

HCF & LCM

1. **Find the L.C.M. of 10, 20, 30**
   (a) 40 (b) 30 (c) 60 (d) 90
2. **Find the L.C.M. of 60, 15, 30**
   (a) 120 (b) 240 (c) 90 (d) 60
3. **Find the L.C.M. of 2, 6, 8, 9**
   (a) 36 (b) 18 (c) 72 (d) 54
4. **Find the smallest number divisible by 9, 12, 15**
   (a) 60 (b) 90 (c) 120 (d) 180
5. **Find the L.C.M. of 64, 108**
   (a) 1428 (b) 1728 (c) 1254 (d) 1228
6. **What is the lowest common multiple of 36, 54**
   (a) 54 (b) 144 (c) 120 (d) 108
7. **Find the L.C.M. of 60, 105, 120**
   (a) 640 (b) 784 (c) 840 (d) 945
8. **What is the L.C.M. of 40, 80, 120**
   (a) 90 (b) 180 (c) 360 (d) 240
9. **Find the Smallest number which is divisible by 4, 8, 12, 24**
   (a) 36 (b) 24 (c) 72 (d) 144
10. **Choose the correct L.C.M. of 24, 120, 360**
    (a) 240 (b) 360 (c) 720 (d) 54
11. **Find the H.C.F. of 5, 10**
    (a) 5 (b) 10 (c) 15 (d) 30
12. **Find the H.C.F. of 902, 1394, 3321**
    (a) 23 (b) 27 (c) 37 (d) 41
13. **Find the greatest number that will divide 10, 20, 30.**
    (a) 5 (b) 10 (c) 15 (d) 20
14. **Find the H.C.F. of 14 & 28.**
    (a) 42 (b) 28 (c) 14 (d) 7
15. **Find the H.C.F. of 9, 12, 15**
    (a) 3 (b) 6 (c) 9 (d) 18
16. **Find the greatest number which divides the 24, 120, 360**
    (a) 24 (b) 120 (c) 360 (d) 720
17. **What is the Greatest Common Divisor GCD of 18, 36, 54**
    (a) 27 (b) 54 (c) 9 (d) 18
18. **Find the greatest common divisor of 54, 36, 24**
    (a) 2 (b) 9 (c) 3 (d) 6
19. **Find the H.C.F. of two prime number**
    (a) 0 (b) 1 (c) 2 (d) NOT
20. **Which of the following number will exactly not divide 54, 81, 270, 135.**
    (a) 3 (b) 16 (c) 9 (d) 27
21. **If H.C.F. and L.C.M. of two numbers 'A' and 'B' are X and Y then which is true**
    (a) $A + B = X + Y$ (b) $A \div B = X \div Y$
    (c) $A - B = X - Y$ (d) $A \times B = X \times Y$
22. **If H.C.F. of two numbers is 18 and L.C.M. of same numbers is 108 then find their product**
    (a) 972 (b) 216 (c) 1944 (d) 72
23. **If H.C.F. and L.C.M. of two numbers are 8 and 48 respectively and one number is 24 then find second number**
    (a) 192 (b) 384 (c) 16 (d) 24

24. **If H.C.F. and L.C.M. of two numbers are 16 and 96 respectively and second number is 48 then find first number**
(a) 32 (b) 16 (c) 64 (d) 96

25. **If H.C.F. of two numbers 18 and 27 is 9 then find L.C.M.**
(a) 9 (b) 18 (c) 36 (d) 54

26. **If L.C.M. of two number 12 and 16 is 48 then find the H.C.F.**
(a) 12 (b) 4 (c) 21 (d) 28

27. **Find the L.C.M. of 1/10 , 2/5 ,3/20**
(a) 1/6 (b) 6/5 (c) 2/5 (d) 3/10

28. **Find the H.C.F. of 4/15 , 2/5 ,6/25**
(a) 2/5 (b) 12/5 (c) 2/75 (d) 3/10

29. **Find H.C.F. of 3.6, 0.24, 1.2**
(a) 1.2 (b) 0.24
(c) 2.4 (d) 0.024

30. **Find L.C.M. of 3.6, 1.8, 0.144**
(a) 3.6 (b) 0.36 (c) 0.036 (d) 36

31. **Ram, Shyam and Mohan start to run together on a track. They complete a round of it in 75, 50 and 30 minutes. After how much time will they meet together at starting point**
(a) 5 hrs (b) 2 hrs
(c) 3 hrs (d) 2.5 hrs

32. **An army contingent if 616 members is to march behind an army band of 32 members. The two groups are to march in the same number of columns. What is the maximum number if columns**
(a) 2 (b) 4 (c) 8 (d) None

33. **Find the smallest number which when divided by 24, 36 and 54 leaves a remainder 5 in each case**
(a) 216 (b) 221 (c) 213 (d) 21

34. **Find the greatest number that will divide 134, 159, 184 so as to leave remainder 9 in each case**
(a) 5 (b) 15 (c) 25 (d) 35

35. **Find the least number which when divided by 4, 5, 6 and 7 leaves the remainder 3, 4, 5, 6**
(a) 419 (b) 420 (c) 421 (d) 422

36. **Find the largest number which will divide 38, 45, 52 and leaves remainder 2, 3, 4**
(a) 6 (b) 8 (c) 10 (d) 4

37. **Find H.C.F. of $22 \times 32 \times 5 \times 72$, $23 \times 3 \times 53 \times 7$, $24 \times 34 \times 7 \times 112$**
(a) 42 (b) 64 (c) 72 (d) None

38. **Three balls ring simultaneously at 11:00 a.m. They ring at regular intervals of 20, 30 and 40 minute. The time when all the three bells will ring together next is**
(a) 1:00 p.m (b) 1:30 p.m
(c) 1:45 p.m (d) 2:00 p.m

39. **Find the largest 6-digit number which when divided by 3, 4, 5, 6, 8 leaves remainder 1, 2, 3, 4, 6**
(a) 999958 (b) 999962
(c) 999960 (d) 999968

40. **Find the greatest number that divides 43, 91 and 183 and leaves same remainder**
(a) 4 (b) 6 (c) 7 (d) 11

41. **What is the L.C.M. of $23 \times 32 \times 5$, $24 \times 3 \times 52$, $23 \times 52 \times 73$**
(a) $23 \times 32 \times 51 \times 72$
(b) $24 \times 32 \times 52$
(c) $23 \times 32 \times 72$
(d) None

42. Two numbers are in the ratio 2 : 3 and their L.C.M. is 54 then find the numbers

(a) 8, 12 (b) 10, 15

(c) 14, 21 (d) 18, 27

43. Two numbers are in the ratio 5 : 6 and their H.C.F. is 11 find the numbers

(a) 35, 42 (b) 45, 52

(c) 44, 55 (d) 55, 66

44. Find the smallest 4-digit number which is exactly divisible by 12, 18 and 24

(a) 1000 (b) 1004

(c) 1008 (d) 1064

45. Find the largest 3-digit number which is exactly divisible by 3, 4, 6 and 8

(a) 980 (b) 984

(c) 992 (d) 996

46. The largest number which when divided by 6, 9 and 12 leaves 1 as remainder

(a) 783 (b) 857

(c) 524 (d) 973

47. The H.C.F. of a/b , c/d ,e/f

(a) (LCM of (a, b, c))/(HCF of (b, d, f))

(b) (HCF of (a, b, c))/(HCF of (b, d, f))

(c) (LCM of (a, b, c))/(LCM of (b, d, f))

(d) (HCF of (a, c, e))/(LCM of (b, d, f))

48. The L.C.M. of p/q , r/s ,t/u

(a) (LCM of (p, r, t))/(HCF of (q, s, u))

(b) (HCF of (p, r, s))/(HCF of (q, s, t))

(c) (LCM of (p, r, s))/(LCM of (q, s, t))

(d) (HCF of (p, r, s))/(LCM of (q, s, t))

49. Three bells tolls at the intervals of 9, 12, 15 minutes respectively. If they start tolling together after what time will they next toll together ?

(a) 2 hours (b) 3 hours

(c) 4 hours (d) 5 hour

50. Three bells, toll at intervals of 36 sec, 40 sec, and 48 sec respectively. They start ringing toll at particular time. They next toll together after

(a) 18 min

(b) 12 min

(c) 6 min

(d) 10 min

ANSWER-KEY													
1.	(C)	**2.**	(D)	**3.**	(C)	**4.**	(D)	**5.**	(B)	**6.**	(D)	**7.**	(C)
8.	(D)	**9.**	(B)	**10.**	(B)	**11.**	(A)	**12.**	(D)	**13.**	(B)	**14.**	(C)
15.	(A)	**16.**	(A)	**17.**	(D)	**18.**	(D)	**19.**	(B)	**20.**	(B)	**21.**	(D)
22.	(C)	**23.**	(C)	**24.**	(A)	**25.**	(D)	**26.**	(B)	**27.**	(B)	**28.**	(C)
29.	(B)	**30.**	(A)	**31.**	(A)	**32.**	(D)	**33.**	(B)	**34.**	(C)	**35.**	(A)
36.	(A)	**37.**	(D)	**38.**	(A)	**39.**	(B)	**40.**	(A)	**41.**	(D)	**42.**	(D)
43.	(D)	**44.**	(C)	**45.**	(B)	**46.**	(D)	**47.**	(D)	**48.**	(A)	**49.**	(B)
50.	(B)												

1. Decimals are one of the types of number, which has a whole numbers and the fractional part separated by a decimal point.

⇒ The dot present between the whole number and fractions part is called the decimal point. Example, 34.5 a decimal number. these, 34 is a whole number part and 5 is fractional part.

Let us discuss some other examples

Here is the number "thirty four and seven. written as a decimal number.

TYPE OF DECIMAL NUMBERS

1. Recurring decimal numbers (Repeating or non- terminating decimals)

Eg:- 3.125125 (Finite)

3.12121212_____(Infinite)

2. None recurring decimal numbers (non repeating or fermenting decimals)

Eg:- 3.2376 (Finite)

3.137654_____(Infinite)

3. **Decimal fraction:-** It represents the fraction whose denominator is power of ten.

Eg:- $81.75 = \frac{8175}{100}$

(ii) $34.425 = \frac{32425}{1000}$

→ **Converting the decimal number into decimal fraction**

⇒ For the decimal point place "1" in the denomitoer and remove the decimal point.

⇒ "1" is followed by a number of zeroes equal to the number of digit following the decimal point.

For example"-

81.75

$\downarrow\downarrow\downarrow$

100

$81.75 = \frac{8175}{100}$

⇒ **Write the following as decimals:-**

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

(c) $200+60+5+\frac{1}{10}$ (d) $70+\frac{8}{10}$

(e) $70+\frac{8}{10}$ (f) $4\frac{2}{10}$

(g) $\frac{3}{2}$ (h) $\frac{2}{5}$

(i) $\frac{12}{5}$ (j) $3\frac{3}{5}$

(k) $3\frac{3}{5}$

⇒ **Write the following decimals as fractions. Reduce the fraction to the lowest form.**

(a) 0.6 (b) 2.5

(c) 1.0 (d) 3.8

(e) 13.7 (f) 21.2 (g) 6.4

⇒ **Express the following as cm using decimals.**

(a) 2 mm (b) 30 mm
(c) 116 mm (d) 4 cm
(e) 4 cm (f) 2 mm
(g) 162 mm (h) 83 mm

1. Simplification of 31.22 – 26.3 5 – 34.78 + 41.13 in fractional form is:-

(a) $\frac{1125}{100}$ (b) $\frac{1140}{100}$
(c) $\frac{1122}{100}$ (d) $\frac{1136}{100}$

2. 0.9 + 9 + 9.99 + 9.9 + 9.09 =

(a) 38.88 (b) 38.64
(c) 38.38 (d) 38.48

3. Simplification the following expression in the fractional form:-

3.57 – 1.35 + 2.63

(a) $4\frac{13}{20}$ (b) $4\frac{17}{20}$
(c) $4\frac{19}{20}$ (d) $5\frac{3}{20}$

4. 777.77 + 77.77 + 7.77 + 7.7777 = ?

(a) 872.0876 (b) 871.0877
(c) 901.0821 (d) 851.0876

5. 4.4 – 44.04 + 444.004 = ?

(a) 492.444 (b) 404.364
(c) 444.364 (d) 444.444

6. 322.002 – 123.987 = ?

(a) 195.012 (b) 196.013
(c) 197.014 (d) 198.015

7. 945 – 232.8 – 376.06 + 79.387 = ?

(a) 412.529 (b) 413.528
(c) 415.527 (d) 414.522

8. 6.25 ÷ 0.25 = ?

(a) 5 (b) 25 (c) 50 (d) 125

9. 72 ÷ 0.9 = ?

(a) 0.8 (b) 8 (c) 80 (d) 800

10. 2.6 × 0.7 × 6.24 = ?

(a) 11.3267 (b) 11.3521
(c) 11.3568 (d) 11.5232

11. 0.026 X 0.26 = ?

(a) 0.00576 (b) 0.00476
(c) 0.00486 (d) 0.00676

12. 0.016 × 0.016 = ?

(a) 0.0256 (b) 0.000016
(c) 0.000096 (d) 0.000256

13. What is the sum of 6.66, 666.06, 6666.06 ?

(a) 7338.78 (b) 07398.78
(c) 8215.22 (d) 7421.82

14. x × 0.6 = 0.001404

(a) 0.000234 (b) 0.0234
(c) 0.00234 (d) 0.02034

15. X × 0.013 = 0.0065 × 0.129. Find the value of x.

(a) 0.645 (b) 0.0835
(c) 0.835 (d) 0.0645

16. Find the value of $\frac{(0.01)^2-(0.001)^2}{0.01-0.001}$

(a) 0.010 (b) 0.011
(c) 0.11 (d) 0.101

17. The product of two decimal numbers is 792.534 If one of them is 13.8, then the other is ?

(a) 57.43 (b) 43.58
(c) 36.12 (d) 54.33

18. Find the value of $\frac{(0.75)^2-(0.25)^2}{0.75+0.25}$

(a) 1 (b) 0 (c) 0.50 (d) 0.25

19. **Which number divided by 390 gives the same quotient as 6 divided by 0.65?**
(a) 3600 (b) 3900 (c) 4200 (d) 4800

20. **The product of the two decimal numbers is 3. If one of the numbers is 1.7, then what is second numbers?**
(a) 1.3 (b) 1.9 (c) 2.3 (d) None

21. **In the equation 3.1 + x + y = 11 – 13 – 2.42, the sum of x and y is :**
(a) 4.08 (b) 4.18
(c) 3.18 (d) None

22. **In the expression 5.26 + a – 4.3 = 9.09 + 2.3 – b, the sum of a and b is :**
(a) 10.43 (b) 1.63 (c) 9.56 (d) 8.43

23. **If the product of 12.7 × 3.21 = 40.767 then the value of 0.127 × 321 is ?**
(a) 40.867 (b) 40.767
(c) 50.821 (d) 600

24. **Write in ascending order?**
48.52, 32.82, 56.100, 87.98, 64.50
(a) 48.52, 87.98, 64.50, 56.100, 87.98, 64.50
(b) 64.50, 56.100, 32.82, 87.98, 48.52
(c) 56.100, 87.98, 64.50, 32.82, 48.52
(d) 32.82, 48.52, 56.100, 64.50, 87.98

25. **Write in descending order ?**
523.82, 654.81, 42.8310, 152.567, 829.82
(a) 152.567, 42.8310, 829.82, 654.81, 523.82
(b) 42.8310, 152.567, 523.82, 654.81, 829.82
(c) 829.82, 654.81, 523.82, 152.567, 42.8310
(d) None of these.

26. **If $\frac{1}{0.2} = 5$, then the value of $\frac{1}{0.00002}$ is:-**
(a) 500 (b) 500
(c) 50000 (d) 500000

27. **Which is greatest (using > , < , =)**
(a) 53.82 < 82.56
(b) 883.52 > 192.63
(c) 9200.534 > 834.543
(d) 825.23 < 900.83

28. **The weight of a box is 143.08 kg. What will be the weight of 18 such boxes?**
(a) 2474.34 kg (b) 2568.54 kg
(c) 2638.74 kg (d) 2575.44 kg

29. **A vessel weights 1.24 kg when empty and 5.36 kg when fuel of milk. What will be its weight when it is three-fourth full of milk?**
(a) 3.09 kg (b) 4.33 kg
(c) 4.12 kg (d) 1.03 kg

30. **Evaluate :-** $\frac{(2.39)^2 - (1.61)^2}{2.39 - 1.61}$
(a) 2 (b) 4 (c) 6 (d) 8

31. **What decimal of an hour is a second ?**
(a) 0.0025 (b) 0.0256
(c) 0.00027 (d) 0.000126

32. **The value of** $\frac{(0.96)^3 - (0.1)^3}{(0.96)^2 + 0.096 + (0.1)^2}$ **is :-**
(a) 0.86 (b) 1.72
(c) 0.97 (d) 1.06

33. **If 2994 ÷ 14.5 = 172, then 29.94 ÷ 1.45 = ?**
(a) 0.172 (b) 1.72
(c) 17.2 (d) 172

34. **When 0.232323 _____ is converted into a fraction then the result is ?**

(a) $\frac{1}{5}$ (b) $\frac{2}{9}$ (c) $\frac{23}{99}$ (d) $\frac{23}{100}$

35. $\frac{0.009}{?} = 0.1$

(a) 0.0009 (b) 0.09

(c) .9 (d) 9

36. $\frac{144}{0.144} + \frac{14.4}{x} \longrightarrow$ **then the value of x is**

(a) 0.0144 (b) 1.44

(c) 14.4 (d) 144

37. **The decimal equivalent to** $12\frac{1}{16}$ **is**

(a) 12.625 (b) 12.6025

(c) 12.0625 (d) 12.0525

38. **Find the nearest value of**

0.6 × 0.6 × 0.6

(a) 0.200 (b) 0.216

(c) 0.226 (d) 0.238

39. **Write in ascending order**

(a) $\frac{2}{5}, \frac{2}{3}, \frac{7}{9}, \frac{8}{9}$ (b) $\frac{2}{3}, \frac{2}{3}, \frac{7}{9}, \frac{8}{9}$

(c) $\frac{8}{9}, \frac{7}{9}, \frac{2}{3}, \frac{2}{3}$ (d) $\frac{7}{9}, \frac{2}{3}, \frac{2}{5}, \frac{8}{9}$

40. **5 cm is expressed in kilometer as:-**

(a) 0.005 km (b) 0.0005 km

(c) 0.00005 km (d) 0.000005 km

41. **on dividing 4.239 by 0.9**

(a) 0471 (b) 4.71 (c) 47.1 (d) 471

42. **The value of 0.9 ÷ (0.3 X 0.3) is**

(a) 0.01 (b) 0.1 (c) 1 (d) 10

43. **140.75 X 0.01 is equal to**

(a) 140.75 (b) 14000.75

(c) 1.4075 (d) 0.14075

44. **What is the length of the longest tape which can be used to measure 1 m 75 cm , 4 m 50 cm and 6 m 50 cm?**

(a) 25 cm (b) 50 cm

(c) 55 cm (d) 75 cm

ANSWER-KEY												
1.	(C)	**2.**	(A)	**3.**	(B)	**4.**	(B)	**5.**	(B)	**6.**	(D)	**7.**	(C)
8.	(B)	**9.**	(C)	**10.**	(C)	**11.**	(D)	**12.**	(D)	**13.**	(A)	**14.**	(C)
15.	(D)	**16.**	(B)	**17.**	(A)	**18.**	(C)	**19.**	(A)	**20.**	(D)	**21.**	(D)
22.	(A)	**23.**	(B)	**24.**	(D)	**25.**	(C)	**26.**	(C)	**27.**	(C)	**28.**	(D)
29.	(B)	**30.**	(B)	**31.**	(C)	**32.**	(A)	**33.**	(C)	**34.**	(C)	**35.**	(B)
36.	(A)	**37.**	(C)	**38.**	(B)	**39.**	(A)	**40.**	(C)	**41.**	(B)	**42.**	(D)
43.	(C)	**44.**	(A)										

SIMPLIFICATION

BODMAS

Rules of Simplification

V → Vinculum

B → Remove Brackets :-

In the order (), {}, []

O → Of

D → Division

M → Multiplication

A → Addition

S → Subtraction

1. Simplify : 24 ÷ 4 × 6 + 8.

(a) 42 (b) 44 (c) 49 (d) 30

2. Simplify : 13 + 4 × 8 – 3.

(a) 44 (b) 52 (c) 48 (d) 42

3. Simplify : 16 + [8 ÷ 4 + (3 – 2)].

(a) 15 (b) 19 (c) 29 (d) 18

4. Simplify : 10+[15 – {16 ÷ (10 – 3 × 2)}].

(a) 21 (b) 31 (c) 29 (d) 22

5. Simplify : $\frac{3}{4}$ of 16 × 3 + 12 ÷ 4 – 5

(a) 35 (b) 25 (c) 34 (d) 38

6. Simplify : $3\frac{3}{5} \div \frac{9}{5}$ of $5 + \frac{3}{10} \times \frac{5}{6}$

(a) $\frac{13}{30}$ (b) $\frac{13}{15}$ (c) $\frac{20}{13}$ (d) $\frac{3}{5}$

7. Simplify : $\frac{6 \times 4 - 24 \div 12}{8 \div 2 + 2 \times 3}$

(a) $2\frac{3}{5}$ (b) $2\frac{1}{5}$ (c) $3\frac{2}{5}$ (d) $4\frac{1}{5}$

8. Simplify : $\frac{2}{3}$ of $\frac{3}{4}$ of $\frac{8}{15}$ of 90

(a) 24 (b) 20 (c) 12 (d) 28

9. Simplify : 10 + 12 ÷ 6 – 3 × 2 .

(a) 5 (b) 4 (c) 9 (d) 6

10. Simplify : 20 – 16 ÷ 4 + 4 × 5.

(a) 26 (b) 36 (c) 39 (d) 65

11. Find the value of 47 – 18 ÷ 3 × 5.

(a) 18 (b) 27 (c) 17 (d) 19

12. Find the value of 15 + 36 ÷ 9 × 7.

(a) 43 (b) 42 (c) 40 (d) 53

13. What is the value of
11 + 32 ÷ 8 × 4 – 12.

(a) 25 (b) 16 (c) 31 (d) 15

14. What is the value of
23 – 7 × 8 ÷ 4 + 20.

(a) 29 (b) 31 (c) 39 (d) 40

15. Simplify : 15 × 144 ÷ 12 – 3 × 6 + 2.

(a) 165 (b) 164 (c) 154 (d) 174

16. Simplify:13 × 91 ÷ 13 +98 ÷ 14 × 3 – 7 × 4.

(a) 84 (b) 82 (c) 184 (d) 74

17. Find the value of :
66 ÷ 6 × 8 – 74 ÷ 2 × 3 + 21 × 4.

(a) 60 (b) 61 (c) 64 (d) 70

18. Find the value of : 333 × 33 ÷ 33 ÷ 3.

(a) 112 (b) 113 (c) 111 (d) 222

19. Find the value of :
666 × 6 × 66 ÷ 6 ÷ 66 ÷ 3.

(a) 111 (b) 222
(c) 333 (d) None of these

20. What is the value of (19 – 13 + 15 × 3 ÷ 5)

(a) 15 (b) 25
(c) 16 (d) None of these

21. **What is the value of**
$(19 - 12 + 15 \times 3 \div 5)$
(a) 15 (b) 25
(c) 16 (d) None of these

22. **What is the value of**
$(99 \div 11 \div 3 \times 5 + 17 \times 3 - 24 \div 8 \times 4)$
(a) 64 (b) 54
(c) 52 (d) None of these

23. **What is the value of :**
$\left(7\frac{1}{2} + \left[\frac{15}{3} \times \frac{3}{5} + \left(13 \div 2\frac{1}{6}\right)\right]\right) \times 5$
(a) $82\frac{1}{2}$ (b) $52\frac{3}{2}$
(c) $53\frac{1}{2}$ (d) $55\frac{1}{2}$

24. **Simplify : $16 + [7 \times 4 + (36 \div 4 \times 5)]$**
(a) 80 (b) 99 (c) 89 (d) 88

25. **Simplify :**
$36 \div 4 \times 3 + [96 \div 6 - (3 \times 5 \div 15)]$
(a) 52 (b) 45 (c) 40 (d) 42

26. **Simplify : $17 \times 117 \div 9 -$**
$[56 \div 14 + (15 \div 5 \times 3 - 4) - 1]$
(a) 223 (b) 213 (c) 226 (d) 230

27. **Simplify :**
$67 - [48 - \{4 \times 6 - (36 \div 12 + 9\}]$
(a) 31 (b) 32 (c) 41 (d) 33

28. **$8 \times 7 + [36 \div 4 + \{3 \times 24 \div 8 -$**
$(84 \div 12 - 3)\}]$
(a) 50 (b) 60 (c) 70 (d) 140

29. **Simplify : $63 \div 7 \times 13 -$**
$[72 - \{4 + 3(35 \div 7 - 2) + 29\}]$
(a) 88 (b) 87 (c) 97 (d) 90

30. **Simplification of the following gives:**
$37 - \left[23 - \left\{14 - \left(8 - \overline{4+3}\right)\right\}\right]$
(a) 27 (b) 28 (c) 29 (d) 30

31. **Simplification of the following gives:**
$32 + [14 \times 7 - \{112 \div 8 + 4$
$(27 \div 9 \times 2 - \overline{3 \times 5 - 12})\} - 11]$
(a) 94 (b) 103
(c) 93 (d) None of these

32. **Simplification of the following gives:**
$154 \div 14 + 3\,[27 \times 8 - 2(81 \div 9 - 2 \times 3)$
$- 14 \times 10]$
(a) 222 (b) 223 (c) 221 (d) 200

33. **Simplify :**
$117 - 2[48 \div 16 \times 16 - 4(6 \times 5 - 25)]$
(a) 31 (b) 61 (c) 52 (d) 51

34. **Find the value of x in the following equation :**
$\frac{7 \times 6 + 2 \times X}{9 \times 8 - 7 \times 8} = 20$
(a) 139 (b) 140 (c) 141 (d) 129

35. **If $57 - [42 - \{27 - (11 - x)\}] = 32$, then x is equal to :**
(a) 1 (b) 2 (c) 3 (d) 0

36. **$50 - 6 \times 3 + 7 - 9 \div 3$**
(a) 37 (b) 35 (c) 36 (d) 72

37. **$6 \times 8 + 27 \div 9 - 3 \times 5 + 9$**
(a) 45 (b) 35 (c) 36 (d) 72

38. **$14 \div 7 \times 5 - 18 \div 3 + 6 \times 4 - 6$**
(a) 21 (b) 22 (c) 24 (d) 30

39. **$72 \div 18 \times 13 + 98 \div 7 - 14 \times 3$**
(a) 21 (b) 22 (c) 24 (d) 30

40. **Simplify:**
$8 + 3[18 \div 6 + (3 \times 5 - 24 \div 8) \times 2]$
(a) 89 (b) 90 (c) 79 (d) 65

41. $\frac{246 \div 6 - 8 \times 4}{6 \times 8 - 9 \times 5} = ?$
(a) $\frac{3}{2}$ (b) 3
(c) $\frac{2}{3}$ (d) None of these

42. $\frac{48 \div 6 \times 5 - 19 \times 2}{4 \times 7 + 36 \div 12} = ?$

(a) $\frac{2}{31}$ (b) $\frac{3}{31}$

(c) $\frac{2}{30}$ (d) None of these

43. $\frac{96 \div 16 \times 2 - 7 \times 4 + 25}{41 - 54 \div 9 - 6 \times 5} = ?$

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

(c) $2\frac{2}{5}$ (d) None of these

ANSWER-KEY														
1.	(B)	**2.**	(D)	**3.**	(B)	**4.**	(A)	**5.**	(C)	**6.**	(A)	**7.**	(B)	**8.**	(A)
9.	(D)	**10.**	(B)	**11.**	(C)	**12.**	(A)	**13.**	(D)	**14.**	(A)	**15.**	(B)	**16.**	(A)
17.	(B)	**18.**	(C)	**19.**	(B)	**20.**	(A)	**21.**	(C)	**22.**	(B)	**23.**	(A)	**24.**	(C)
25.	(D)	**26.**	(B)	**27.**	(A)	**28.**	(C)	**29.**	(B)	**30.**	(A)	**31.**	(C)	**32.**	(C)
33.	(B)	**34.**	(A)	**35.**	(A)	**36.**	(C)	**37.**	(A)	**38.**	(B)	**39.**	(C)	**40.**	(A)
41.	(B)	**42.**	(A)	**43.**	(B)										

MEASUREMENT

1. **Represent 26 kg 5 g using the concept of decimals.**
   (a) 26.05 kg (b) 26.005 kg
   (c) 26.5 kg (d) 26.0005 kg

2. **$\frac{7}{6}$ of a leap year = ... weeks.**
   (a) 427 (b) 35 (c) 61 (d) 13

3. **The value of 200°F in degree Celsius is..... [Use °C = $\frac{5}{9}$ (°F – 32)]**
   (a) 80.3°C (b) 93.3°C
   (c) 100.3°C (d) 105.3°C

4. **Express 804.291 kg in decagrams.**
   (a) 8.04291 dag (b) 80429.1 dag
   (c) 8042.91 dag (d) 804291 dag

5. **Convert 2222 hours into days and hours.**
   (a) 91 days 16 hours
   (b) 93 days 8 hours
   (c) 91 days 8 hours
   (d) 92 days 14 hours

6. **Ram slept at 9:30 p.m. and got up at 6:00 a.m. next day. How much time did he sleep ?**
   (a) 8 hours 30 minutes
   (b) 7 hours 30 minutes
   (c) 9 hours 30 minutes
   (d) 8 hours 40 minutes

7. **A lawn tennis match starts at 9:15 a.m. and finishes at 4:10 p.m. Find the duration of the match.**
   (a) 6 hours 45 minutes
   (b) 6 hours 55 minutes
   (c) 7 hours 5 minutes
   (d) 7 hours 15 minutes

8. **Find the interval between 7:25 a.m. and 3:10 p.m.**
   (a) 7 hours 25 minutes
   (b) 7 hours 35 minutes
   (c) 7 hours 45 minutes
   (d) 7 hours 55 minutes

9. **Add 42 hours 35 minutes 30 seconds and 14 hours 20 minutes and 35 seconds.**
   (a) 56 hr 54 min 15 sec
   (b) 56 hr 56 min 15 sec
   (c) 54 hr 56 min 5 sec
   (d) 56 hr 56 min 5 sec

10. **A school starts at 8:20 a.m. and closes at 1:50 p.m. Find the duration for which the school remains open.**
    (a) 4 hours 30 minutes
    (b) 5 hours 30 minutes
    (c) 5 hours 10 minutes
    (d) 5 hours 40 minutes

11. **Naveen bought 3 m 20 cm cloth for his shirt and 2 m 5 cm cloth for his trousers. Find the total length of the cloth bought by him.**
    (a) 5.7 m (b) 5.25 m
    (c) 4.25 m (d) 5.00 m

12. **In the morning, the temperature was – 10°C and it decreased 3 degrees by the evening. What was the temperature in the evening ?**
    (a) – 7°C
    (b) – 23°C
    (c) – 13°C
    (d) – 12°C

13. The table below shows the maximum temperatures in New York City last year. Use the information in this table and answer the following:

What was the average maximum temperature (upto 2 decimal places) of three months May, July and September last year in New York City?

Month	Jan.	Mar.	May	Jul.	Sep.	Nov.
Maximum temperature, in °C	3	9	21	29	24	11

(a) 21.65°C (b) 24.66°C
(c) 25.52°C (d) 26.23°C

14. One decimeter is equal to

(a) 1×10^{-1} m (b) 1×10^{-2} m
(c) 1×10^{2} m (d) 1×10^{3} m

15. The temperature dropped by 15 degree celsius in the last 30 days. If the rate of temperature drop remains the same, how many degrees will the temperature drop in the next ten days?

(a) 10°C (b) 5°C (c) 20°C (d) 15°C

16. How many seconds are there in 24 hours?

(a) 30 (b) 60
(c) 3600 (d) 86400

Directions :- Following table has to be consulted.

Name of the city	Temperature at 3 am (°C)	Temperature at 3 pm (°C)
Chennai	21.1	29.9
Mumbai	19.0	35.1
Thiruvananthapuram	21.6	33.5
Kolkata	13.1	26.6
Bhopal	9.8	25.9
Srinagar	1.3	8.1
Guwahati	12.8	24.8
Jaipur	10.2	23.2

17. Which place had the highest temperature at 3 a.m. ?

(a) Chennai
(b) Thiruvananthapuram
(c) Srinagar
(d) Jaipur

18. Which place is the coolest at 3 p.m. ?

(a) Kolkata (b) Srinagar
(c) Mumbai (d) Bhopal

19. How much higher is the temperature in Mumbai from that of Srinagar at 3 p.m.?

(a) 81°C (b) 35.1°C
(c) 27°C (d) 29°C

20. How many degrees will the temperature at 3 a.m. need to rise for it to reach 40 degree celsius in Thiruvananthapuram.

(a) 6.5°C (b) 18.4°C
(c) 21.6°C (d) 33.5°C

21. How much lower is the temperature of Kolkata from that in Chennai at both times (3 a.m. and 3 p.m.)?

(a) 8°C and 3.3°C (b) 3°C and 8°C
(c) 8°C and 8°C (d) 3.3°C and 3.3°C

22. 2 mm = _____.

(a) 0.2 m (b) 0.02 m
(c) 0.002 m (d) 2000 m

23. 5 Kilometre is equal to

(a) 50 dam (b) 500 dam
(c) 5000 dam (d) $\frac{1}{500}$ dam

24. 10 dm is equal to

(a) 10 mm (b) 1000 mm
(c) $\frac{1}{100}$ mm (d) 0.10 mm

25. 78 g = _____.

(a) 0.78 kg (b) 78000 kg
(c) 0.078 kg (d) 0.708 kg

26. 5.5 mg is equal to?

(a) 0.055 g (b) 0.0055 g
(c) 0.00055 g (d) 0.75 g

27. Change 575 minutes to hours and minutes.

(a) 9 hr 35 min (b) 8 hr 45 min
(c) 9 hr 45 min (d) 6 hr 55 min

28. Change 632 seconds to minutes and seconds.

(a) 1 min 23 sec (b) 11 min 32 sec
(c) 10 min 32 sec (d) 1 min 32 sec

29. 2.4 minutes = _____.

(a) 154 sec (b) 164 sec
(c) 144 sec (d) 104 sec

30. 13.5 hours = _____.

(a) 801 min (b) 820 min
(c) 840 min (d) 810 min

31. Change 1472 seconds to minutes and seconds.

(a) 24 min 32 sec (b) 24 min 38 sec
(c) 24 min 23 sec (d) 24 min 84 sec

32. Convert 14 years and 4 months into months.

(a) 174 months (b) 144 months
(c) 172 months (d) 184 months

33. Convert 866 months into years and months.

(a) 72 years 3 months
(b) 71 years 2 months
(c) 62 years 2 months
(d) 72 years 2 months

34. Convert 425 days into weeks and days.

(a) 60 weeks 4 days
(b) 6 weeks 5 days
(c) 60 weeks 5 days
(d) 61 weeks 5 days

35. 1 leap year = _____.

(a) 266 days (b) 365 days
(c) 364 days (d) 366 days

36. Convert 20 paisa into rupees.

(a) ₹ 0.20 (b) ₹ 0.02
(c) ₹ 2 (d) ₹ 20

37. Convert ₹ $5\frac{3}{4}$ into paise.

(a) 675 paise (b) 575 paise
(c) 475 paise (d) 525 paise

38. The value of 125°C in degree Fahrenheit is

(a) 275°F (b) 258°F
(c) 257°F (d) 267°F

39. The value of 158°F in degree Fahrenheit is

(a) 70°C (b) 75°C (c) 65°C (d) 55°C

ANSWER-KEY												
1.	(B)	**2.**	(C)	**3.**	(B)	**4.**	(B)	**5.**	(D)	**6.**	(A)	**7.**	(B)
8.	(C)	**9.**	(D)	**10.**	(B)	**11.**	(B)	**12.**	(C)	**13.**	(B)	**14.**	(A)
15.	(B)	**16.**	(D)	**17.**	(B)	**18.**	(B)	**19.**	(C)	**20.**	(B)	**21.**	(A)
22.	(C)	**23.**	(B)	**24.**	(B)	**25.**	(C)	**26.**	(B)	**27.**	(A)	**28.**	(C)
29.	(C)	**30.**	(D)	**31.**	(A)	**32.**	(C)	**33.**	(D)	**34.**	(C)	**35.**	(D)
36.	(A)	**37.**	(B)	**38.**	(C)	**39.**	(A)						

1. Which of the following is a perfect square number ?
(a) 325 (b) 252 (c) 225 (d) 371

2. Which of the following is not a perfect square number?
(a) 676 (b) 256 (c) 441 (d) 245

3. Number of digits in the square root of 62478078 is
(a) 3 (b) 4 (c) 5 (d) 6

4. Find the square of 45.
(a) 2125 (b) 2025 (c) 2145 (d) 2135

5. Find the square of 95.
(a) 9025 (b) 9125
(c) 8025 (d) 9525

6. $(96)^2 = ?$
(a) 9016 (b) 9186
(c) 9036 (d) 9216

7. The square of 195 is
(a) 38025 (b) 48025
(c) 58025 (d) 57025

8. What is the square of 111 ?
(a) 12221 (b) 12321
(c) 12431 (d) 12525

9. What is the square of 999 ?
(a) 988001 (b) 998001
(c) 997001 (d) 989001

10. What is the square of 2222 ?
(a) 4937284
(b) 7837274
(c) 4537294
(d) 4038278

11. Find the square of 0.02.
[Sainik School 2005]
(a) 0.04 (b) 0.004
(c) 0.0004 (d) 0.4

12. Find the square of 0.25.
(a) 6.25 (b) 0.625
(c) 0.0625 (d) 625

13. Find the square of $\frac{37}{11}$.
(a) $\frac{1369}{121}$ (b) $\frac{1449}{121}$
(c) $\frac{1279}{121}$ (d) $\frac{1329}{121}$

14. What is the square of $5\frac{3}{8}$?
(a) $\frac{1849}{64}$ (b) $\frac{1689}{64}$
(c) $\frac{1929}{64}$ (d) $\frac{1789}{64}$

15. Find the square root of $6\frac{9}{36}$.
(a) $2\frac{1}{2}$ (b) $3\frac{1}{2}$
(c) $2\frac{1}{6}$ (d) $3\frac{1}{6}$

16. Find the square root of $5\frac{41}{16}$.
(a) $2\frac{1}{4}$ (b) $1\frac{3}{4}$
(c) $2\frac{3}{4}$ (d) $1\frac{1}{4}$

17. Find the square root of $2\frac{113}{256}$.
(a) $1\frac{2}{16}$ (b) $1\frac{3}{16}$
(c) $1\frac{7}{16}$ (d) $1\frac{9}{16}$

18. Find the square of $\left(\frac{1}{2}+\frac{3}{4}\right)$.
(a) $1\frac{5}{6}$ (b) $3\frac{5}{16}$
(c) $1\frac{9}{16}$ (d) $3\frac{9}{16}$

19. The square of $\left(\frac{1}{2}+\frac{1}{4}+\frac{1}{8}\right)$ is

(a) $\frac{49}{64}$ (b) $\frac{125}{64}$

(c) $\frac{25}{64}$ (d) $\frac{49}{64}$

20. $\left(\frac{3}{5}-\frac{2}{3}+\frac{1}{4}\right)^2 = ?$

(a) $\frac{64}{3600}$ (b) $\frac{256}{3600}$

(c) $\frac{144}{3600}$ (d) $\frac{121}{3600}$

21. Find the square of $\left(1\frac{1}{2}+2\frac{2}{3}-\frac{1}{6}\right)$

[Sainik School 2013]

(a) 4 (b) 16 (c) $\frac{1}{36}$ (d) $\frac{1}{4}$

22. Find the square of $\left(1\frac{1}{14}-2\frac{1}{7}+3\frac{1}{2}-1\frac{6}{7}\right)$

[Sainik School 2007]

(a) $\frac{25}{49}$ (b) $\frac{9}{49}$

(c) $\frac{4}{49}$ (d) $\frac{16}{49}$

23. $\sqrt{2401} = ?$

(a) 29 (b) 59 (c) 39 (d) 49

24. Find the square root of 7569.

(a) 87 (b) 77 (c) 67 (d) 97

25. $\sqrt{15625} = ?$

(a) 115 (b) 125 (c) 135 (d) 105

26. $\sqrt{4489} = ?$

(a) 67 (b) 53 (c) 63 (d) 83

27. $\sqrt{106276} = ?$

(a) 226 (b) 426 (c) 326 (d) 356

28. Find the square root of 0.0625.

(a) 0.15 (b) 0.025

(c) 0.25 (d) 0.0025

29. $\left(\frac{\sqrt{625}}{11}\times\frac{14}{\sqrt{25}}\times\frac{11}{\sqrt{196}}\right)$ is equal to

[Sainik School 2020]

(a) 5 (b) 6 (c) 8 (d) 11

30. Find the cube of 18.

(a) 1728 (b) 5832

(c) 9261 (d) 10648

31. $(26)^3 = ?$

(a) 10648 (b) 19643

(c) 17576 (d) 21952

32. Find the cube of (0.8).

(a) 0.64 (b) 0.512

(c) 51.2 (d) 5.12

33. $(0.15)^3 = ?$

(a) 0.1728 (b) 0.15625

(c) 0.015625 (d) 0.15275

34. The cube of $4\frac{1}{5}$ is.

(a) $\frac{8000}{64}$ (b) $\frac{9261}{125}$

(c) $\frac{9261}{25}$ (d) $\frac{10648}{125}$

35. $\left(\frac{1}{4}-\frac{1}{5}\right)^3 = ?$

(a) $\frac{1}{8000}$ (b) $\frac{9}{8000}$

(c) $\frac{64}{8000}$ (d) $\frac{125}{8000}$

36. Find the cube of $\left(\frac{1}{2}+\frac{1}{4}+\frac{1}{8}\right)$.

(a) $\frac{343}{64}$ (b) $\frac{343}{512}$

(c) $\frac{512}{343}$ (d) $\frac{343}{8}$

37. What is the cube root of 19683.?

(a) 37 (b) 25 (c) 29 (d) 27

38. $\sqrt[3]{42875} = ?$

(a) 35 (b) 55 (c) 45 (d) 65

39. $\sqrt[3]{636056} = ?$

(a) 86 (b) 96 (c) 48 (d) 99

40. What is the cube root of 0.729 ?

(a) 0.3 (b) 0.9 (c) 0.09 (d) 0.009

41. $\sqrt[3]{0.015625} = ?$

(a) 2.5 (b) 0.25 (c) 0.025 (d) 25

42. Find the square root of 7921.

[Sainik School 2017]

(a) 69 (b) 79 (c) 89 (d) 71

43. Find the cube of the following:

$\frac{3}{5} + \frac{1}{5} + \frac{2}{5} \div \frac{1}{5} - \frac{1}{5}$

[Sainik School 2009]

(a) $\frac{2197}{125}$ (b) $\frac{2137}{125}$

(c) $\frac{2057}{125}$ (d) $\frac{2227}{125}$

44. The value of $\sqrt{1089 \div 121}$ equal to

[Sainik School 2020]

(a) 3 (b) 13 (c) 33 (d) 53

45. The number of square numbers lying between 75 and 225 is

[Sainik School 2016]

(a) 5 (b) 6 (c) 7 (d) 8

46. $\left(\sqrt{100} + \sqrt{0.01} - \sqrt{0.0001}\right) = ?$

(a) 10.09 (b) 10.01

(c) 11.01 (d) 10.10

47. $\sqrt[3]{0.000343} - \sqrt[3]{0.000125} = ?$

(a) 0.02 (b) 0.4 (c) 0.2 (d) 4

48. $\sqrt{144} + \sqrt{256} = ?$

(a) 12 (b) 16 (c) 28 (d) 30

49. $\sqrt{576} + \sqrt{1296} + \sqrt{625} = ?$

(a) 55 (b) 85 (c) 75 (d) 100

50. If $\frac{X}{36} = \frac{49}{X}$, then the value of X is

(a) 42 (b) 48 (c) 16 (d) 56

51. Find the value of k, if $\frac{169}{k} = \frac{k}{81}$.

(a) 109 (b) 117

(c) 144 (d) 132

52. $\sqrt{\frac{0.009 \times 0.036 \times 0.016 \times 0.08}{0.002 \times 0.0008 \times 0.0002}} = ?$

(a) 24 (b) 36 (c) 35 (d) 49

53. How many perfect square numbers are there upto first 200 natural numbers?

(a) 11 (b) 12 (c) 13 (d) 14

54. If $\sqrt{15} = 3.88$, then $\sqrt{\frac{5}{3}} = ?$

(a) 1.29 (b) 1.25

(c) 1.28 (d) 1.21

55. Find the smallest number by which 125 must be multiplied so that it becomes a perfect square.

(a) 2 (b) 3 (c) 5 (d) 4

56. Find the smallest number by which 750 must be multiplied to make it a perfect square.

(a) 40 (b) 60 (c) 30 (d) 20

57. What is the smallest number by which 420 must be divided so as to make it perfect square ?

(a) 75 (b) 69 (c) 39 (d) 105

58. Find the smallest number by which 144 must be multiplied to make it a perfect cube.

(a) 12 (b) 32 (c) 16 (d) 9

59. The smallest number by which 2662 must be divided to make it a perfect cube is

(a) 4 (b) 5 (c) 3 (d) 2

60. If the square of a number is added to the square of 28, the result is 1808. What is the number ?

[Sainik School 2019]

(a) 66 (b) 50 (c) 32 (d) 16

61. $\sqrt{625}+\sqrt{6.25}+\sqrt{0.0625}=?$

(a) 40.5 (b) 45.6 (c) 33. (d) 27.75

62. By how much does $(\sqrt{12}+\sqrt{18})$ exceeds $(\sqrt{3}+\sqrt{2})$=?

(a) $2(\sqrt{3}-\sqrt{2})$ (b) $2(\sqrt{3}+\sqrt{2})$

(c) $(\sqrt{3}+2\sqrt{2})$ (d) $(\sqrt{2}-4\sqrt{3})$

63. $\sqrt[3]{2}\times\sqrt{2}\times\sqrt[3]{3}\times\sqrt{3}=?$

(a) 6^5 (b) $6^{\frac{5}{6}}$ (c) 6 (d) 6^2

64. The value of $\sqrt{2^4}+\sqrt[3]{64}+\sqrt[4]{2^8}$ is

(a) 12 (b) 16 (c) 18 (d) 24

65. The sum of the digits of the smallest number which, when multiplied by 1800, gives a perfect cube, is

(a) 2 (b) 3 (c) 6 (d) 8

66. $3402\div ?=\sqrt{26244}$

(a) 162 (b) 21 (c) 441 (d) 42

67. $\sqrt[3]{681472}$ = ?

(a) 88 (b) 96 (c) 98 (d) 76

68. $\sqrt{2916}\times\sqrt{?}=2268$

(a) 1764 (b) 42 (c) 1936 (d) 44

69. $\sqrt{5+\sqrt{11+\sqrt{19+\sqrt{29+\sqrt{49}}}}}$ = ?

(a) 3 (b) 2 (c) 4 (d) 6

70. The value of $\sqrt{400}+\sqrt{0.0400}+\sqrt{0.000004}$ is

(a) 0.222 (b) 20.22

(c) 20.202 (d) 2.022

71. If the square root of 841 is 29, then $\sqrt{0.00000841}$ is equal to

(a) 0.029

(b) 0.0029

(c) 0.00029

(d) 0.29

72. $\sqrt{\frac{0.064\times0.256\times15.625}{0.025\times0.625\times4.096}}$?

(a) 2 (b) 2.4 (c) 0.24 (d) 4.2

73. $\sqrt{19.36}+\sqrt{0.1936}+\sqrt{0.001936}+\sqrt{0.00001936}$?

(a) 4.8484 (b) 4.8694

(c) 4.8884 (d) 4.8234

74. If cube root of 175616 is 56, then the value of $\sqrt[3]{175.616}+\sqrt[3]{0.175616}+\sqrt[3]{0.000175616}$ is equal to

(a) 0.168 (b) 62.16

(c) 6.216 (d) 6.116

75. If $(1101)^2=1212201$, then the value of $\sqrt{121.2201}$ is

(a) 110.1 (b) 1101

(c) 1.101 (d) 11.01

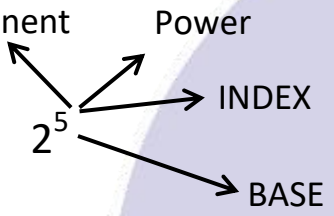
ANSWER-KEY												
1.	(C)	**2.**	(D)	**3.**	(B)	**4.**	(B)	**5.**	(A)	**6.**	(D)	**7.**	(A)
8.	(B)	**9.**	(B)	**10.**	(A)	**11.**	(C)	**12.**	(C)	**13.**	(A)	**14.**	(A)
15.	(A)	**16.**	(C)	**17.**	(D)	**18.**	(C)	**19.**	(D)	**20.**	(D)	**21.**	(B)
22.	(D)	**23.**	(D)	**24.**	(A)	**25.**	(B)	**26.**	(A)	**27.**	(C)	**28.**	(C)
29.	(A)	**30.**	(B)	**31.**	(B)	**32.**	(C)	**33.**	(C)	**34.**	(B)	**35.**	(A)
36.	(B)	**37.**	(D)	**38.**	(C)	**39.**	(A)	**40.**	(B)	**41.**	(B)	**42.**	(C)
43.	(A)	**44.**	(A)	**45.**	(B)	**46.**	(A)	**47.**	(A)	**48.**	(C)	**49.**	(B)
50.	(A)	**51.**	(B)	**52.**	(B)	**53.**	(D)	**54.**	(A)	**55.**	(C)	**56.**	(C)
57.	(D)	**58.**	(A)	**59.**	(D)	**60.**	(C)	**61.**	(D)	**62.**	(C)	**63.**	(B)
64.	(A)	**65.**	(C)	**66.**	(B)	**67.**	(A)	**68.**	(A)	**69.**	(A)	**70.**	(C)
71.	(B)	**72.**	(A)	**73.**	(C)	**74.**	(C)	**75.**	(D)				

SURDS:- Surds are root values that cannot be simplified into rational numbers.

E.g $\sqrt{2} = 2^{\frac{1}{2}}$

$\sqrt{5} = 5^{\frac{1}{2}}$

INDICES:- Indices are numeric values that act as power or exponent to a particular number.



Ex.

1. Which of the following is a surd ?

(a) $\sqrt{4}$ (b) $\sqrt{36}$ (c) $\sqrt{8}$ (d) $\sqrt{49}$

2. Which of the following is not a surd ?

(a) $\sqrt{81}$ (b) $\sqrt{45}$ (c) $\sqrt{149}$ (d) $\sqrt{60}$

3. Recognize the rational number ?

(a) $\sqrt[4]{27}$ (b) $\sqrt[3]{16}$ (c) $\sqrt{11}$ (d) $\sqrt[5]{243}$

4. Recognize the rational number ?

(a) $\sqrt[3]{25}$ (b) $\sqrt[3]{27}$ (c) $\sqrt[2]{8}$ (d) $\sqrt[4]{20}$

Basic formulae:

(i) $a^\circ = 1$

(ii) $a^{-n} = \frac{1}{a^n}$

(iii) $\frac{a^m}{b^{-n}} = \frac{b^n}{a^{-m}}$

(iv) $a^m \times a^n = a^{m+n}$

(v) $\frac{a^m}{a^n} = a^{m-n}$

(vi) $(a^m)^n = a^{m \times n}$

(vii) $a^m = a^n$

$m = n$

(viii) $a^m = b^m$

$a = b$

5. Find the value of $5^\circ \times 3^\circ$ is

(a) 15 (b) 8 (c) 1 (d) 0

6. Solve: 5^{-2} = ?

(a) 25 (b) – 25 (c) $\frac{1}{5}$ (d) $\frac{1}{25}$

7. $\frac{4^2}{2^{-2}}$ = ?

(a) 64 (b) 16 (c) 4 (d) – 64

8. $3^2 \times 3$ = ?

(a) 3^4 (b) 3^3 (c) 3^2 (d) 0

9. $5^5 \times 5^3 \times 5^2 \times 5^1$ = ?

(a) 5^{10} (b) 5^{11} (c) 5^9 (d) NOT

10. $\frac{15^7}{15^5}$ = ?

(a) 215 (b) 205 (c) 225 (d) 625

11. What will be the value of $\left(\left((2)^2\right)^2\right)^2$ is

(a) 2^6 (b) 2^5 (c) 2^8 (d) 2

12. $\left\{(-2)^{-2}\right\}^{-2}$ = ?

(a) 16 (b) 8 (c) – 8 (d) – 1

13. $3^{-2} \times 3^2$ =?

(a) 81 (b) 18 (c) 0 (d) 1

14. $\left\{(40)^2\right\}^{\frac{1}{2}}$ = ?

(a) 40 (b) 160 (c) 1600 (d) – 40

15. $\sqrt{\sqrt{\sqrt{2}}}$ = ?

(a) $2^{\frac{1}{3}}$ (b) $2^{\frac{1}{4}}$ (c) $2^{\frac{1}{6}}$ (d) $2^{\frac{1}{8}}$

16. If $5^{x+2} = 5^5$ then find the value of x is.

(a) 2 (b) 1 (c) 0 (d) 3

17. If $5^{5x+5} = 1$ then x equals to?

(a) 0 (b) -1 (c) 1 (d) $-\frac{4}{5}$

18. $4^{4x+1} = \frac{1}{64}$, then x is

(a) $\frac{1}{2}$ (b) -1 (c) $-\frac{1}{2}$ (d) $-\frac{1}{6}$

19. $\sqrt{2^x} = 256$ then x is

(a) 14 (b) 16 (c) 18 (d) 20

20. $\frac{3^0 + 3^{-1}}{3^{-1} - 3^0}$

(a) -2 (b) -1 (c) 1 (d) 2

21. If $27^{2x-1} = 243$, then x equals to

(a) $\frac{1}{3}$ (b) $\frac{3}{4}$ (c) $\frac{5}{3}$ (d) $\frac{4}{3}$

22. If $\left(\frac{3}{5}\right)^3 \left(\frac{3}{5}\right)^{-6} = \left(\frac{3}{5}\right)^{2x-1}$ then x is.

(a) -2 (b) 2

(c) 1 (d) -1

ANSWER-KEY												
1.	(C)	**2.**	(A)	**3.**	(D)	**4.**	(B)	**5.**	(C)	**6.**	(D)	**7.**	(A)
8.	(B)	**9.**	(B)	**10.**	(C)	**11.**	(C)	**12.**	(A)	**13.**	(D)	**14.**	(A)
15.	(D)	**16.**	(D)	**17.**	(B)	**18.**	(B)	**19.**	(B)	**20.**	(A)	**21.**	(D)
22.	(D)												

PRACTICE QUESTIONS :

1. Convert 10% into fraction

(a) $\frac{1}{5}$ (b) $\frac{2}{10}$ (c) $\frac{1}{100}$ (d) $\frac{1}{10}$

2. Convert $16\frac{4}{5}\%$ into fraction.

(a) $\frac{84}{200}$ (b) $\frac{4}{5}$ (c) $\frac{21}{125}$ (d) $\frac{21}{225}$

3. Convert $5\frac{2}{5}\%$ into fraction.

(a) $\frac{27}{500}$ (b) $\frac{27}{200}$

(c) $\frac{12}{500}$ (d) None of these

4. 130% is equal to:

(a) 1.3 (b) 130

(c) 0.13 (d) 0.013

into percentage

(a) $521\frac{1}{3}\%$ (b) $531\frac{2}{3}\%$

(c) $543\frac{1}{3}\%$ (d) $558\frac{1}{3}\%$

10. $3\frac{2}{25}$ can be written in the percentage as:

(a) 208% (b) 108%

(c) 308% (d) 408%

11. $24\frac{8}{3}\%$ is equal to

(a) $\frac{7}{15}$ (b) $\frac{4}{15}$ (c) $\frac{1}{15}$ (d) $\frac{4}{25}$

12. 1% can be written in the fraction as:

5. 5.7% in the decimal number is equal to

(a) 0.57 (b) 5.7

(c) 0.057 (d) 0.0057

6. Convert $\frac{1}{12}$ into the percentage

(a) $8\frac{1}{3}\%$ (b) $8\frac{2}{3}\%$

(c) $\frac{1}{12}\%$ (d) $\frac{100}{12}\%$

7. Convert 2.25 into percentage

(a) 2.25% (b) 225%

(c) 0.225% (d) None of these

8. Convert $\frac{3}{8}$ into percentage

(a) 25.5% (b) 37.5%

(c) 41.5% (d) 47.5%

9. Convert $5\frac{7}{12}$

(a) $\frac{1}{100}$ (b) $\frac{3}{100}$

(c) $\frac{1}{10}$ (d) $\frac{1}{1000}$

13. 100% can be written as:

(a) 10 (b) 100

(c) 1 (d) 1000

14. Convert $\frac{3}{8}\%$ into the fraction.

(a) $\frac{3}{8000}$ (b) $\frac{3}{80}$

(c) $\frac{3}{800}$ (d) None of these

15. 500% is equal to

(a) 5 (b) 500 (c) 50 (d) 5000

How to calculate percentage:

Q. Find x% of y (y is a number)

$$y \times \frac{x}{100} = \frac{xy}{100}$$

1. Find 10% of 80

Sol. $80 \times \frac{10}{100} = 8$

2. Find 30% of 500

Sol. $500 \times \frac{30}{100} = 150$

16. What is the 20% of 1500 kg

(a) 3000 kg (b) 300 kg
(c) 30 kg (d) 3 kg

Sol. $1500 \times \frac{20}{100} = 300\ Kg$

17. What is the 25% of 160 m

Sol. $160 \times \frac{25}{100} = 40\,m$

(a) 40 m (b) 4 m
(c) 400 m (d) 0.4 m

18. Find 10% of 17% of 30% of ₹ 5000

(a) ₹ 15.5 (b) ₹ 155
(c) ₹ 255 (d) ₹ 25.5

19. Find 0.25% of 1000

(a) 0.25 (b) 0.025
(c) 2.5 (d) 25

20. 20% of 8% of 400 km

(a) 6.4 (b) 64 (c) 640 (d) 6400

21. Find 0.07% of 4900

(a) 343 (b) 34.3
(c) 3.43 (d) None of these

22. Simplify 10% of 200 + 25% of 500

(a) 145 (b) 245 (c) 1.45 (d) 0.145

23. 5% of 5% of 5% of 5000 is equal to:

(a) 0.125 (b) 0.625
(c) 0.0625 (d) 0.0125

24. 5% of 100 + 15% of 240 + 10% of 120

(a) 53 (b) 55 (c) 530 (d) 50

25. 5% of 550 – 10% of 150 = ?

(a) 125 (b) 1.25 (c) 1125 (d) 12.5

26. 3.2% of 700 – 4.5% of 300 = ?

(a) 9.8 (b) 6.8 (c) 7.3 (d) 8.9

27. 4% of 36 – 6% of 48 + 8% of 65 = ?

(a) 8.34 (b) 6.76 (c) 4.84 (d) 3.76

28. Find $\frac{1}{2}$% of 200

(a) 1 (b) 2 (c) 0.1 (d) 4

29. $\frac{2}{5}$% of 5000 + $\frac{3}{8}$% of 800

(a) 2.3 (b) 230
(c) 23 (d) None of these

30. 0.5% of 25 + 0.2% of 120 – 0.1% of 10

(a) 355 (b) 350 (c) 0.355 (d) NOT

31. 7% of 360 is how much more than 12% of 140 ?

(a) 6.8 (b) 7.2 (c) 8.4 (d) 9.6

32. 40% of 800 is how much less than 50% of 1000

(a) 180 (b) 160 (c) 150 (d) 140

33. 3.5% of 12.8 is how much less than 8.47 of 15.2

(a) 0.6238 (b) 0.8288
(c) 0.8376 (d) None

What percent of x is y:

To determine the percentage, we have to divide the value by the total value and then multiply the resultant by 10

Percentage formula $= \frac{\text{value}}{\text{Total value}} \times 100$

(Type of value would be same)

* What % of x is y

Sol. $= \frac{y}{x} \times 100$

$= \frac{100y}{x}\%$

e.g. what percent of 50 kg is 2 kg ?

$\frac{2}{50} \times 100 = 4\%$

34. What percent of ₹ 200 is ₹ 5 is

(a) 25 (b) 2.5 (c) 20 (d) 0.25

35. What percent of 1 kg is 5 gm ?

(a) 20% (b) 125% (c) 25% (d) 0.5%

36. What percent of ₹ 5 is 20 paise ?

(a) 2% (b) 4% (c) 5% (d) 8%

37. What percentage is 450 meters of 5 km?

(a) 7% (b) 9% (c) 12% (d) 15%

38. What percent of 12 kg is 132 g

(a) 1.1% (b) 2.1% (c) 3.7% (d) 4.1%

39. What percent of $\frac{1}{5}$ is $\frac{7}{25}$?

(a) 120% (b) 130%

(c) 140% (d) 150%

40. What percentage is $\frac{3}{7}$ of $\frac{2}{5}$?

(a) $103\frac{1}{3}\%$ (b) $105\frac{3}{7}\%$

(c) $107\frac{1}{7}\%$ (d) $107\frac{3}{7}\%$

Find the number when a% of number is given:

e.g Find the number whose 17% is 119.

Let the number is = N

(I) $N \times \frac{17}{100} = 119$

$N = \frac{119 \times 100}{17}$

$N = 700$

Hence the number is 700.

(II) $17\% - 119$

$1\% - \frac{119}{17}$

$100\% - \frac{119}{17} \times 100$

$100\% - 700$

41. Find the number whose 20% is 500 ?

(a) 2200 (b) 2500

(c) 25000 (d) NOT

42. Find the number whose 23% is 197.8.

(a) 600 (b) 720 (c) 860 (d) 980

43. Find the number whose 2.5% is 140

(a) 5600 (b) 5200 (c) 5300 (d) 560

44. If 4% of a number is 1.60 then what will be the number:

(a) 400 (b) 4 (c) 0.40 (d) 40

45. If 0.25% of a number is 2.5 than find the number

(a) 100 (b) 1000 (c) 2000 (d) 3000

* **Ratio to percentage conversion**

1. First write the ratio a : b in the form of fraction $\frac{a}{b}$.
2. Multiply the fraction $\frac{a}{b}$ by 100 to convert in terms of percentage.
3. Finally, add the percentage symbol (%) to the resultant value.

e.g. Convert 5 : 4 into the percentage.

1. $\frac{5}{4}$
2. $\frac{5}{4} \times 100$
3. 125%

46. Convert 18 : 25 into the percentage.

(a) 64% (b) 68% (c) 72% (d) 76%

47. The ratio 7 : 16 is equal to ?

(a) 33.25% (b) 37.75%

(c) 41.25 (d) 43.75%

48. Convert 20 : 15 in the percentage is equal to ?

(a) $133\frac{1}{3}$ (b) $133\frac{2}{3}\%$

(c) $134\frac{1}{3}\%$ (d) NOT

49. The ratio 3 : 8 is equal to ?

(a) 37.2% (b) 37.8%

(c) 37.5% (d) NOT

50. Convert 1 : 14 into the percentage.

(a) $7\frac{1}{9}\%$ (b) $7\frac{1}{14}\%$

(c) $7\frac{1}{7}\%$ (d) $14\frac{1}{7}\%$

* **Percentage increase and decrease:**

Percentage Increase :- The percentage increase is equal to the subtraction of the original number from a new number, divided by the original number and multiplied by 100.

% increase =

$$\frac{[(\text{New number} - \text{original number})]}{\text{original number}} \times 100$$

Percentage decrease: A percentage decrease is equal to the subtraction of a new number from the original number, divided by the original number and multiplied by 100.

% decrease =

$$\frac{[(\text{original number} - \text{New number})]}{\text{original number}} \times 100$$

51. A number increased by 40% gives 112. Find the number?

(a) 60 (b) 70 (c) 80 (d) 90

52. A number decreased by 30% gives 630. Find the number.

(a) 800 (b) 850 (c) 900 (d) 950

53. Find the amount which is 20% more than ₹ 180.

(a) ₹ 216 (b) ₹ 224 (c) ₹ 230 (d)₹ 236

54. Find the length which is 40% less than 380 meters

(a) 218 m (b) 228 m

(c) 236 m (d) 242 m

55. The capacity of a tank is 60% more than 325 liters. Find the capacity of that tank.

(a) 480 ℓ (b) 505 ℓ (c) 520 ℓ (d) 535 ℓ

56. What is the weight of a box which is 20% less than 5.5 kg

(a) 4.4 kg (b) 4.3 kg

(c) 4.2 kg (d) 4.5 kg

57. If 8% of a number exceeds, 3% of the same number by 250 then the number is.

(a) 6000 (b) 5000 (c) 7000 (d) 8000

58. If x is 20% more than y, then find the value of $\frac{x-y}{x+y}$

(a) $\frac{1}{6}$ (b) $\frac{1}{11}$ (c) $\frac{1}{12}$ (d) $\frac{1}{10}$

59. If A is 30% less than B, then find the value of $\frac{2B+A}{B-A}$.

(a) $6\frac{1}{3}$ (b) $6\frac{4}{3}$ (c) $3\frac{3}{2}$ (d) 9

60. The population of a village increases 5% annually. If its present population is 4410. Then was its population before 1 year.

(a) 4000 (b) 4200

(c) 7010 (d) 4250

61. The population of a town decrease by 10% every year. If its present population is 4410. Than what will be its population after 1 year.

(a) 3969 (b) 3970

(c) 4000 (d) 3900

62. If x is 20% more than y and y is 25% less than 500, than x is equal to

(a) 300 (b) 350 (c) 400 (d) 450

63. A is 20% more than B, then B is less than A by

(a) $16\frac{1}{6}\%$ (b) $16\frac{2}{3}\%$

(c) 25% (d) NOT

64. X is 25% more than y, then y is less than x by

(a) 25% (b) 20%

(c) $16\frac{1}{6}\%$ (d) 30%

65. If a is 5% less than b then b is more than a by:

(a) $5\frac{6}{19}\%$ (b) $5\frac{2}{19}\%$

(c) $5\frac{5}{19}\%$ (d) NOT

66. If P is 30% less than q then q is more than P by.

(a) $42\frac{6}{7}\%$ (b) $42\frac{7}{6}\%$

(c) 42% (d) 21%

67. If 90% of A = 30% of B, then B is what percent of A ?

(a) 150% (b) 200%

(c) 250% (d) 300%

68. If 8% of x = 4% of y, then find the value of 25% of (x ÷ y)

(a) $\frac{1}{6}$ (b) $\frac{1}{8}$

(c) $\frac{5}{6}$ (d) $\frac{3}{8}$

69. 50% of (A – B) = 30% of (A + B) and B = x% of A, then find the value of x.

(a) 10 (b) 20 (c) 25 (d) 40

70. If 35% of x is 735, then what is the value of 70% of x.

(a) 1150 (b) 1330

(c) 1470 (d) 1610

71. The height of a tree increases $\frac{1}{5}$th of its original height every year. If the present height of the tree is 25 meters, then what will be its height after 2 years.

(a) 36 meters (b) 35 meters

(c) 39 meter (d) NOT

72. Two numbers are respectively 30% and 40% more than the third number. If the first number is x% of the second number, then find the value of x.

(a) $87\frac{2}{7}$ (b) $89\frac{3}{7}$

(c) $91\frac{4}{7}$ (d) $92\frac{6}{7}$

73. The price of a pen increases from ₹ 10 to ₹ 15. Find the percent increase in its price.

(a) 40% (b) 55%

(c) 50% (d) NOT

74. The price of a radio decreases from ₹ 3200 to 2400. What is the percent decrease in the price of the radio.

(a) 25% (b) 20%

(c) 15% (d) 16.66%

75. What is 40% of a number whose 30% is 30

(a) 5 (b) 2 (c) 6 (d) 4

76. If chhaya's weight is 30% more than maya's weight, then maya's weight is what percent less than chhaya's weight?

(a) $21\frac{2}{13}\%$ (b) $23\frac{1}{13}\%$

(c) $25\frac{3}{13}\%$ (d) $27\frac{4}{13}\%$

77. A team played 60 matches and won 44 out of them. Find the win percentage of the team.

(a) 61% (b) $63\frac{2}{3}\%$

(c) $67\frac{2}{3}\%$ (d) $73\frac{1}{3}\%$

78. What percent of 63 is 7

(a) $11\frac{1}{9}\%$ (b) $9\frac{1}{9}\%$

(c) $10\frac{1}{9}\%$ (d) NOT

79. A student secures 235 marks out of 450 in an examination. Find the percentage of marks obtained by him.

(a) 52.22% (b) 53.31%

(c) 54.29% (d) 55.11%

80. Ravi's weight is 25% of mayank's weight and 40% of Rahul's weight. Then what percent of Rahul's weight is mayank's weight.

(a) 160% (b) 140% (c) 135% (d) 115%

ANSWER-KEY														
1.	(D)	**2.**	(C)	**3.**	(A)	**4.**	(A)	**5.**	(C)	**6.**	(A)	**7.**	(B)	**8.**	(B)
9.	(D)	**10.**	(C)	**11.**	(B)	**12.**	(A)	**13.**	(C)	**14.**	(C)	**15.**	(A)	**16.**	(B)
17.	(A)	**18.**	(D)	**19.**	(C)	**20.**	(A)	**21.**	(C)	**22.**	(A)	**23.**	(B)	**24.**	(A)
25.	(D)	**26.**	(D)	**27.**	(D)	**28.**	(A)	**29.**	(C)	**30.**	(C)	**31.**	(C)	**32.**	(A)
33.	(D)	**34.**	(B)	**35.**	(D)	**36.**	(B)	**37.**	(B)	**38.**	(A)	**39.**	(C)	**40.**	(C)
41.	(B)	**42.**	(C)	**43.**	(A)	**44.**	(D)	**45.**	(B)	**46.**	(C)	**47.**	(D)	**48.**	(A)
49.	(C)	**50.**	(C)	**51.**	(C)	**52.**	(C)	**53.**	(A)	**54.**	(B)	**55.**	(C)	**56.**	(A)
57.	(B)	**58.**	(B)	**59.**	(D)	**60.**	(B)	**61.**	(A)	**62.**	(D)	**63.**	(B)	**64.**	(B)
65.	(C)	**66.**	(A)	**67.**	(D)	**68.**	(B)	**69.**	(C)	**70.**	(C)	**71.**	(A)	**72.**	(D)
73.	(C)	**74.**	(A)	**75.**	(D)	**76.**	(B)	**77.**	(D)	**78.**	(A)	**79.**	(A)	**80.**	(A)

1. Ravi purchased a chair for ₹ 500 and sold it for ₹ 550. What was his gain percent ? [sainik school 2019]

(a) 10% (b) 20%

(c) 30% (d) 40%

2. A table was purchased at ₹ 1000 and was sold at ₹ 800. What was the loss % in this transaction ? [sainik school 2019]

(a) 5% (b) 10%

(c) 20% (d) 30%

3. If the cost price and selling price of an ariticle are in the ratio 10 : 11, then the percentage of profit is :

(a) 10 (b) 9 (c) 3 (d) 1

4. The ratio of cost price and selling price is 5 : 4, the loss percent is :

(a) 20% (b) 25% (c) 40% (d) 50%

5. If selling price of an article is $\frac{8}{5}$ times its cost price, the profit percent on it is:

(a) 120% (b) 160%

(c) 40% (d) 60%

6. If the cost price of an article is 80% of its selling price, the profit percent is :

(a) 20% (b) $22\frac{1}{2}\%$

(c) 24% (d) 25%

7. A watchmaker bought an old watch for ₹ 80. He spent ₹10 on its repair and sold it for ₹117. Find his gain percent. [sainik school 2005]

(a) 20% (b) 25%

(c) 30% (d) 35%

8. Rahul purchases a chair for ₹ 600 and uses ₹ 200 for its repairs. If he sells it for ₹ 1000, then he has : [sainik school 2019]

(a) no profit no loss

(b) 25 % loss

(c) 25 % profit

(d) none

9. A person purchased an old bicycle for ₹ 450 and spent ₹ 50 on its maintenance. If he sold it for ₹ 600, then his profit percentage is [sainik school 2015]

(a) 15 % (b) 18 %

(c) 20 % (d) 25 %

10. A shopkeeper earns a profit of ₹ 80 by selling an ariticle for ₹ 490. Find the cost price of the ariticle. [sainik school 2012]

(a) ₹ 310 (b) ₹ 470

(c) ₹ 410 (d) ₹ 570

11. A shopkeeper sells a bicycle for ₹ 575 and incurs a loss of ₹ 75. Find his loss percent. [sainik school 2014]

(a) $\mathbf{15}$ % (b) $\mathbf{9}\frac{\mathbf{8}}{\mathbf{13}}\%$

(c) $\mathbf{11}\frac{\mathbf{7}}{\mathbf{13}}\%$ (d) $\mathbf{9}\frac{\mathbf{7}}{\mathbf{11}}\%$

12. On selling an article for ₹ 150 a shopkeeper gains ₹ 50. His gain percent is :

(a) 50 % (b) 20 %

(c) 25 % (d) 70 %

13. 20 % loss on selling price is what percent loss on the cost price ?

(a) 25 % (b) 15 %

(c) $16\frac{2}{3}$ % (d) $16\frac{1}{3}$ %

14. If an article costing ₹ 2000 is sold gaining 20 % of its selling price. Find selling price of the article.

(a) ₹ 1500 (b) ₹ 1200

(c) ₹ 2000 (d) ₹ 2400

15. A table was sold at 16% loss for ₹ **3360**. Find the cost price of the table

[sainik school 2019]

(a) ₹ 4000

(b) ₹ 3392

(c) ₹ 3600

(d) ₹ 4296

16. A man buys a cycle for ₹1400 and sells it at a loss of 15 %. What is the selling price of the cycle ?

(a) ₹ 1202 (b) ₹ 1190

(c) ₹ 1160 (d) ₹ 1000

17. A man brought 800 oranges for ₹ 560. Seventy oranges got crushed. He sold the remaining for 80 paise each. Find the gain or loss percentage.

[sainik school 2010]

(a) $\mathbf{2\frac{4}{7}\%}$ **gain**

(b) $\mathbf{2\frac{4}{7}\%}$ **loss**

(c) $\mathbf{4\frac{2}{7}\%}$ **gain**

(d) $\mathbf{4\frac{2}{7}\%}$ **loss**

18. A certain brand of soap-powder is sold at ₹ 15 per packet. It costs ₹ 144 a dozen. What is the profit in percent on 8 dozen packets ?

[sainik school 2021]

(a) 20 (b) 25 (c) 24 (d) 36

19. A carpenter bought 6 chairs for ₹ 90 each. He spent ₹ 10 on each chair for painting. He then sold all the six chairs for ₹ 795. Find his profit or loss.

[sainik school 2011]

(a) ₹ 95 loss

(b) ₹ 95 profit

(c) ₹ 195 loss

(d) ₹195 profit

20. A shopkeeper bought 15 tables at the rate of ₹ 50 each, ₹ 20 chairs at the rate of ₹ 30 each. He spent ₹ 40 on transportation. He sold all the tables and all the chairs for ₹ 1300. Find his gain or loss. [sainik school 2014]

(a) ₹ 90 gain (b) ₹ 90 loss

(c) ₹ 70 gain (d) ₹ 70 loss

21. A man gains 10 % by selling an article for a certain price. If he sells it at double the price, then the profit made is

(a) 120 % (b) 20 %

(c) 40 % (d) 100 %

22. If a boy sells a book for ₹ 450, he makes a loss of 10 % to gain 10 %, what should be the selling price ?

[sainik school 2021]

(a) ₹ 500 (b) ₹ 600

(c) ₹ 550 (d) ₹ 525

23. By selling a bed sheet ₹ 75, a man suffers 4% loss. At what amount should he sell it so as to gain 20% ?

[sainik school 2011]

(a) ₹ 83.75

(b) ₹ 87.25

(c) ₹ 91.25

(d) ₹ 93.75

24. If a man were to sell his chair for ₹ 720, he would lose 25%. To gain 25%, he should sell it for :

(a) ₹ 1200 (b) ₹ 1000

(c) ₹ 960 (d) ₹ 900

25. An article is sold for ₹ 300 at a profit of 20%. Had it been sold ₹ 235, the loss percentage would have been.

(a) 6 (b) 3 (c) 4 (d) 9

26. A trader sells two computers at the same price. On one he makes a profit of 15% and on the other he suffers a loss of 15%. Find his gain or loss percent.

(a) 2.25% loss (b) 2 % gain

(c) No loss no gain (d) 2 % loss

27. A dealer sold two types of goods for ₹ 10,000 each. One of them, he lost 20% and on the other he gained 20%. His gain or loss percent in the entire transction was

(a) 4% gain (b) 4% loss

(c) 2% loss (d) 2% gain

28. A man sold two aricles for ₹ 120000 each. On selling first, he gain 20% and on the other, he loses 20%. Find his total gain or loss.

(a) ₹ 7500

(b) ₹ 5000

(c) ₹ 9600

(d) ₹ 10000

29. An article is sold at a gain of 15%. Had it been sold for ₹ 27 more, the profit would have been 20%. The cost price of the ariticle is

(a) ₹ 500 (b) ₹ 700

(c) ₹ 504 (d) ₹ 540

30. A man sold an article at a loss of 20 %. If he sells the article for ₹ 12 more, he would have gained 10%. The cost price of the article is

(a) ₹ 60 (b) ₹ 40

(c) ₹ 30 (d) ₹ 22

31. Ravi buys some toffees at 2 for a rupee and sells them at 5 for a rupee. His loss percent is :

(a) 120 (b) 90 (c) 30 (d) 60

32. Some articles were bought at 6 for ₹ 5, and sold at 5 for ₹ 6. Gain is :

(a) 5% (b) 6%

(c) 30% (d) 44%

33. Oranges are bought at the rate of 10 for ₹ 25 and sold at the rate of 9 for ₹ 25. The profit is :

(a) $9\frac{1}{11}\%$ (b) 10%

(c) $11\frac{1}{9}\%$ (d) $12\frac{1}{2}\%$

34. If the cost price of 12 pens is equal to the selling price of 8 pens., the gain percent is :

(a) $33\frac{1}{3}\%$ (b) $62\frac{2}{3}\%$

(c) 25% (c) 50%

35. If the cost price of 15 tables be equal to the selling price of 20 tables, the loss percent is:

(a) 20% (b) 30%

(c) 25% (d) 37.5%

36. By selling 8 dozen pencils, a shopkeeper gains the selling price of 1 dozen pencils, What is the gain ?

(a) $12\frac{1}{2}\%$ (b) $13\frac{1}{7}\%$

(c) $14\frac{2}{7}\%$ (d) $87\frac{1}{2}\%$

37. By selling 15 mangoes, a fruit vender recovers the cost price of 20 mangoes What is the profit percentage of the fruit vender ?

(a) 20.5% (b) 30.67%

(c) 33.33% (d) 35.4%

38. Profit after selling a commodity for ₹ 524 is the same as loss after selling it for ₹ 452. The cost price of the commodity is:

(a) ₹480 (b) ₹ 500

(c) ₹ 488 (d) ₹ 485

39. The profit earned after selling an article ₹ 1754 is same as loss incurred after selling the article for ₹1492. What is the cost price of the article ?

(a) ₹1623 (b) ₹ 500

(c) ₹1689 (d) ₹1589

40. The percent of profit, when an article is sold fo ₹ 78, is twice than when it is sold fo ₹ 69, the cost of the article is :

(a) ₹ 49 (b) ₹ 51 (c) ₹ 57 (d) ₹ 60

41. A vendor sells lemons at the rate of 5 for 14, gaining thereby 40%. For how much did he buy a dozen lemons ?

(a) ₹ 20 (b) ₹ 21

(c) ₹ 24 (d) ₹ 28

42. By selling 9 articles for a rupes, a man incurred a loss of 4%. To make a gain of 44%, the number of articles to be sold for a rupee is

(a) 5 (b) 3 (c) 4 (d) 6

43. 12 copies of a book were sold ₹ 1800 thereby gaining cost price of 3 copies. The cost price of a copy is:

(a) ₹ 120 (b) ₹ 150

(c) ₹ 1200 (d) ₹ 1500

44. A dealer sold 3/4 of his article at a gain of 24% and the remaining at the cost price. Percentage of gain in the whole transaction is

(a) 15 (b) 18

(c) 24 (d) 32

45. A fruit seller buys some orange at the rate of 4 for ₹10 and an equal number more at 5 for ₹ 10. He sells the whole lot at 9 for ₹ 20. What is his loss or gain percent ?

(a) loss $1\frac{19}{81}\%$

(b) Gain $1\frac{19}{81}\%$

(c) 2% Loss

(d) No loss no profit

46. A man purchased some eggs at 3 for ₹5 and sold them at 5 for ₹12. Thus he gained ₹ 143 in all. The number of eggs he bought is :

(a) 210 (b) 200 (c) 195 (d) 190

47. Nisha bought a number of oranges at 2 for a rupee and an equal number at 3 for a rupee. To make a profit of 20% she should sell a dozen for

(a) ₹ 10 (b) ₹ 8 (c) ₹ 6 (d) ₹12

48. A person bought 50 pens for ₹ 50 each. He sold 40 of them at a loss of 5%. He wants to gain 10% on the whole. Then his gain percent on the remaining pens should be

(a) 15 (b) 40 (c) 50 (d) 70

49. A clock was sold for ₹144. If the percentage of profit was numerically equal to the cost price, the cost of the clock was:

(a) ₹ 72 (b) ₹ 80 (c) ₹ 90 (d) ₹ 100

50. There is a loss of 4% if an article is sold at ₹ x and gain of 12% if it is sold at y. Then x : y is

(a) 2 : 3 (b) 6 : 7

(c) 4 : 5 (d) 8 : 9

51. The marked price of a bicycle is ₹5000. it is sold for ₹ 4000. Find the discount percent.

(a) 15% (b) 20%

(c) 25% (d) 30%

52. A fan is listed at ₹ 150 and a discount of 20% is given. Then the selling price is

(a) ₹ 180 (b) ₹ 150

(c) ₹ 120 (d) ₹ 110

53. The selling price of a watch is ₹ 2000 Find its Marked price if it is sold at a discount of 20%.

(a) ₹ 2400 (b) ₹ 2050

(c) ₹ 2500 (d) ₹ 2520

54. If a discount of 25% on the marked price of a charger saves a man ₹ 250, then how much did he pay for the charger ?

(a) ₹ 500 (b) ₹ 600

(c) ₹ 700 (d) ₹ 750

55. The Marked price of a Mobile is ₹ 8000. If it is available at a discount of 10%, then its selling price is

(a) ₹ 6000 (b) ₹ 6580

(c) ₹ 7000 (d) ₹ 7200

56. A trade man marks his goods at 25% above the cost price, if he allows his customer 10% discount how much percent profit does he make ?

(a) 7.5% (b) 8.5%

(c) 10.5% (d) 12.5%

57. A person bought an article on 40% discount and sold it at 50% more than the marked price. What profit did he get ?

(a) 50% (b) 90%

(c) 150% (d) 250%

58. The printed price of an article is 40% higher than its cost price. Then the rate of discount such that he gain 12% profit is :

(a) 21% (b) 20%

(c) 18% (d) 15%

59. A dealer allows his customers a discount of 25% and still gains 25%. If the cost price of the article is ₹ 720, then the marked price is

(a) ₹ 1200 (b) ₹ 1100

(c) ₹ 1300 (d) ₹ 1400

60. A retailer buys a sewing machine at a discount of 15% and sells it for ₹ 1955. Thus he makes a profit of 15%. The discount is

(a) ₹ 270 (b) ₹ 290

(c) ₹ 300 (d) ₹ 330

ANSWER-KEY													
1.	(A)	**2.**	(C)	**3.**	(A)	**4.**	(A)	**5.**	(D)	**6.**	(D)	**7.**	(C)
8.	(C)	**9.**	(C)	**10.**	(C)	**11.**	(C)	**12.**	(A)	**13.**	(C)	**14.**	(D)
15.	(A)	**16.**	(B)	**17.**	(C)	**18.**	(B)	**19.**	(D)	**20.**	(B)	**21.**	(A)
22.	(C)	**23.**	(D)	**24.**	(D)	**25.**	(A)	**26.**	(A)	**27.**	(B)	**28.**	(D)
29.	(D)	**30.**	(B)	**31.**	(D)	**32.**	(D)	**33.**	(C)	**34.**	(D)	**35.**	(C)
36.	(C)	**37.**	(C)	**38.**	(C)	**39.**	(A)	**40.**	(D)	**41.**	(C)	**42.**	(D)
43.	(A)	**44.**	(B)	**45.**	(A)	**46.**	(C)	**47.**	(C)	**48.**	(D)	**49.**	(B)
50.	(B)	**51.**	(B)	**52.**	(C)	**53.**	(D)	**54.**	(D)	**55.**	(D)	**56.**	(D)
57.	(C)	**58.**	(A)	**59.**	(A)	**60.**	(C)						

SIMPLE INTEREST

1. Find the simple interest on ₹ 5000 amount at 12% per annum for 3 years
[sainik school 2006]
(a) ₹ 1500 (b) ₹ 1600
(c) ₹ 1700 (d) ₹ 1800

2. A sum of ₹ 4000 is lent for 5 years at the rate of 15% per annum. Find the interest ?
(a) ₹ 3000 (b) ₹ 2000
(c) ₹ 1000 (d) none of these

3. How much simple interest will ₹ 4000 earn in 18 months at 12% per annum?
(a) ₹ 216 (b) ₹ 360
(c) ₹ 720 (d) ₹ 960

4. Find the simple interest on 975.60 for 9 months at 10% p.a.
[sainik school 2009]
(a) ₹ 71.23 (b) ₹ 72.53
(c) ₹ 73.17 (d) ₹ 74.13

5. Find the simple interest, if
P = ₹ 400,R 3.65% per annum and time = 150 days.
[sainik school 2017]
(a) ₹ 5 (b) ₹ 6 (c) ₹ 8 (d) ₹ 12

6. The simple interest on ₹ 7300 from 11 may, 1987 to 10 september, 1987 (both days included) at 5% per annum is
(a) ₹ 123
(b) ₹ 103
(c) ₹ 200
(d) ₹ 223

7. The sum of money, that will give ₹ 1 as interest per days at the rate of 5% per annum simple interest is
(a) ₹ 3650 (b) ₹ 36500
(c) ₹ 730 (d) ₹ 7300

8. The sum lent at 5% per annum (i.e. 365 days) simple interest, that produces interest, of ₹ 2.00 a day, is
(a) ₹ 1,400 (b) ₹ 14,700
(c) ₹ 14,600 (d) ₹ 7,300

9. At some rate of simple interest, A lent ₹ 6,000 to B for 2 years and ₹ 1,500 to C for 4 years and received ₹ 9.00 as interest from both of them together. The rate of interest per annum was
(a) 5% (b) 6% (c) 8% (d) 10%

10. A man took a loan from a bank at the rate of 12% per annum at simple interest. After 3 years he had to pay ₹ 5,400 as interest only for the period. The principal amount borrowed by him was
(a) ₹ 2,000 (b) ₹ 10,000
(c) ₹ 20,000 (d) ₹ 15,000

11. On a deposit of ₹ 6000, Shyam received ₹ 6900 at the end of 1 year. What is the rate of interest ?
[sainik school 2010]
(a) 10% p.a.
(b) 12% p.a.
(c) 15% p.a.
(d) 18% p.a.

12. A trader paid ₹ 900 as simple interest for 3 years on the sum of ₹ 4500 borrowed by him. Find the rate of interest. [sainik school 2014]

(a) $4\frac{2}{3}\%$ p. d.

(b) $5\frac{1}{4}\%$ p. d.

(c) $6\frac{2}{3}\%$ p. d.

(d) $7\frac{1}{2}\%$ p. d.

13. Calculate the time in which ₹ 1250 would become ₹ 1375 at 4% p.a. simple interest. [sainik school 2013]

(a) 2 years (b) $2\frac{1}{2}$ years

(c) 3 years (d) $3\frac{1}{2}$ years

14. In what time will ₹ 1,860 amount to ₹ 2,641.20 at simple interest 12% per annum ?

(a) 3 years (b) $3\frac{1}{2}$ years

(c) 4 years (d) $4\frac{1}{2}$ years

15. In how many years a sum of ₹ 3000 willl yield an interest of ₹ 1080 at 12% per annum simple interest ?

(a) 4 years (b) 3 years

(c) 5 years (d) $2\frac{1}{2}$ years

16. If the simple interest on Rs. 1 for 1 month is 1 paisa, then the rate percent per annum will be

(a) 10% (b) 8% (c) 12% (d) 6%

17. A sum of ₹ 1600 gives a simple interest of ₹ 252 in 2 years and 3 months. The rate of interest per annum is :

(a) $5\frac{1}{2}\%$ (b) 8%

(c) 7% (d) 6%

18. Ashok borrowed a sum of ₹ 1650 from Ramesh at the rate of 8% per annum. He returned the money after 1 year and 6 months. How much had he paid to Ramesh ? [sainik school 2004]

(a) ₹ 1798 (b) ₹ 1818

(c) ₹ 1828 (d) ₹ 1848

19. Find the amount to be paid on ₹ 1400 for $5\frac{1}{2}$ years at the rate of 9% per annum simple interest. [sainik school 2004]

(a) ₹ 2043 (b) ₹ 2093

(c) ₹ 2073 (d) ₹ 2063

20. Jubaida took a loan of ₹ 4000 at 12% annual simple interest. After 3 years, how much money will she have to return ? [sainik school 2016]

(a) ₹ 5220 (b) ₹ 5360

(c) ₹ 5440 (d) ₹ 5520

21. Jatin borrowed ₹ 4500 at 12 paise for every rupee per annum. After 3 years, he returned ₹ 4000 and a wrist watch. Find the cost of the wrist watch. [sainik school 2011]

(a) ₹ 2070 (b) ₹ 2120

(c) ₹ 2180 (d) ₹ 2210

22. Mrs. Singhal deposited ₹ 10000 in a Post office saving at a simple interest of 3% per annum. How much amount will she receive at the end of 4th month ? [sainik school 2017]

(a) ₹ 10100

(b) ₹ 10150

(c) ₹ 10200

(d) ₹ 10050

23. A sum fetched a total simple interest of ₹ 7728 at the rate of 7% per annum in 8 years. What is the sum?

(a) ₹ 13800 (b) ₹ 16560

(c) ₹ 11040 (d) ₹ 8280

24. John invested a sum of money at an annual simple interest rate of 10%. At the end of four years the amount invested plus interest earned was ₹ 770. The amount invested was.

(a) ₹ 650 (b) ₹ 350

(c) ₹ 550 (d) ₹ 500

25. In how many years will a sum of money double itself at 12% per annum?

(a) 8 yrs. 6 month

(b) 6 yrs. 9 month

(c) 8 yrs. 4 month

(d) 7 yrs. 6 month

26. The rate per annum of simple interest, for which a sum of money will be double of itself in 10 years, is:

(a) 1% (b) 5% (c) 10% (d) 20%

27. An amount treble itself in 5 years with simple interest. What is the rate of interest percent per annum ?

(a) 20% (b) 35% (c) 25% (d) 40%

28. In cetain years a sum of money is doubled to itself at simple interest per annum, then the required time will be.

(a) 16 years (b) $12\frac{1}{2}$ years

(c) 8 years (d) $10\frac{2}{3}$ years

29. A certain sum becomes 5 times in 3 years, at simple interest, then in how many years it will become 13 times ?

(a) 6 (b) 15 (c) 9 (d) 12

30. At a certain rate of simple interest, a certain sum of money becomes double of itself in 10 years. It will become treple of itself in

(a) 15 years (b) 18 years

(c) 20 years (d) 30 years

31. The simple interest on a sum for 5 years is $\frac{3}{5}$th of the sum. The rate of interest per annum is

(a) 10% (b) 12%

(c) 8% (d) 12%

32. Simple interest on a certain sum for 6 years is $\frac{9}{25}$ of the sum. The rate of interest is

(a) 6% (b) $6\frac{1}{2}$ %

(c) 8% (d) $8\frac{1}{2}$%

33. A sum of money becomes $\frac{41}{40}$ of itself in $\frac{1}{4}$ years at a certain rate of simple interest. The rate of interest per annum is

(a) 10% (b) 1% (c) 2.5% (d) 5%

34. The simple interest on a sum of money is $\frac{4}{9}$ of the principal and the number of years is equal to the rate per cent per annum. The rate per annum is :

(a) 5% (b) $6\frac{2}{3}$%

(c) 6% (d) $7\frac{1}{5}$%

35. In what time will the simple interest be 2/5 of the principal at 8 per cent per annum ?

(a) 8 years

(b) 7 years

(c) 5 years

(d) 6 years

36. A certain sum doubles in 7 years at simple interest. The same sum under the same interest rate will become 4 times in how many years.
(a) 14 (b) 28
(c) 21 (d) 10

37. A sum was invested on simple interest at a certain rate for 2 years. If the interest rate is increased by 4%, then the interest increases by ₹160. What is the sum (in ₹) invested ?
(a) 2000 (b) 3000
(c) 3500 (d) 4000

38. A money lender lends ₹ 400 for 3 years to a person and lends ₹ 500 for 4 years to the other person at the same rate of simple interest. if all together he receives ₹ 160 as interest, what is the rate of interest per annum?
(a) 5% (b) 7% (c) 9% (d) 10%

39. A sum of ₹ 4000 is lent out in two parts, one at 8% simple interest and the other at 10% simple interest. If the annual interest is ₹ 352, the sum lent at 8% is
(a) ₹ 2900 (b) ₹ 2200
(c) ₹ 2400 (d) ₹ 3100

40. The rate of simple interest per annum of bank being decreased from 5% to 3%, the annual income of a person from interest was less by ₹ 105. The sum deposited at the bank was
(a) ₹ 6,000
(b) ₹ 7,200
(c) ₹ 6,800
(d) ₹ 7,000

41. ₹ 800 amounts to ₹ 920 in 3 years at simple interest. If the interest rate is increased by 3%, it would amount to
(a) ₹ 1056 (b) ₹ 1112
(c) ₹ 1182 (d) ₹ 992

42. In what time will ₹ 8,000 at 3% per annum, produce the same interest as ₹ 6,000 does in 5 years at 4% simple interest?
(a) 5 years (b) 6 years
(c) 3 years (d) 4 years

43. At the same rate of simple interest sum of the interest of ₹ 300 for 4 years and the interest of ₹ 400 for 3 years is ₹ 120. The rate of interest is
(a) 5% (b) 4% (c) 6% (d) 10%

44. Two equal sums were lent out at 7% and 5% S.I. respectively. The interest earned on the two loans add up to ₹ 960 for 4 years. The total sum lent out in
(a) ₹ 3500 (b) ₹ 2500
(c) ₹ 2000 (d) ₹ 3000

45. A certain sum becomes 3 fold at 4% rate of simple interest. At what rate, it will becomes 6 fold ?
(a) 8% (b) 10% (c) 9% (d) 12%

46. A person invests money in three different schemes for 6 years, 10 years and 12 years at 10 percent, 12 percent and 15 percent simple interest respectively. At the completion of each scheme, he gets the same interest. The ratio of his investment is
(a) 6 : 3 : 2 (b) 2 : 3 : 4
(c) 3 : 4 : 6 (d) 3 : 4 : 2

47. The simple interest on a certain sum at 5% per annum for 3 years and 4 years differ by ₹ 42. The sum is :

(a) ₹ 210 (b) ₹ 280

(c) ₹ 750 (d) ₹ 840

48. Nitin borrowed some money at the rate of 6% p.a. for the first three years, 9% p.a. for the next five years and 13% p.a. for the period beyond eight years. if the total interest paid by him at the end of eleven years is ₹ 8160, the money borrowed by him (in ₹) was

(a) 12000

(b) 6000

(c) 8000

(d) 10000

49. Ramesh borrowed a sum at 5 per annum simple interest from Rahul. He returns the amount after 5 years returns 2% of the total amount received. How much did Ramesh borrowed if he received ₹ 5 ?

(a) ₹ 250 (b) ₹ 200 (c) ₹ 150 (d) ₹ 175

50. A money lender claims to lend money at the rate of 10% per annum simple interest. However, he takes the interest in advance when he lends a sum for one year. At what interest rate does he lend the money actually ?

(a) 10% (b) $10\frac{1}{9}\%$

(c) 11% (d) $11\frac{1}{9}\%$

ANSWER-KEY													
1.	(D)	**2.**	(A)	**3.**	(C)	**4.**	(C)	**5.**	(B)	**6.**	(A)	**7.**	(D)
8.	(C)	**9.**	(A)	**10.**	(D)	**11.**	(C)	**12.**	(C)	**13.**	(B)	**14.**	(B)
15.	(B)	**16.**	(C)	**17.**	(C)	**18.**	(D)	**19.**	(B)	**20.**	(C)	**21.**	(B)
22.	(A)	**23.**	(A)	**24.**	(C)	**25.**	(C)	**26.**	(C)	**27.**	(D)	**28.**	(A)
29.	(C)	**30.**	(C)	**31.**	(B)	**32.**	(A)	**33.**	(A)	**34.**	(B)	**35.**	(C)
36.	(C)	**37.**	(A)	**38.**	(A)	**39.**	(C)	**40.**	(D)	**41.**	(D)	**42.**	(A)
43.	(A)	**44.**	(C)	**45.**	(B)	**46.**	(A)	**47.**	(D)	**48.**	(C)	**49.**	(B)
50.	(D)												

AVERAGE

$$\text{AVERAGE} = \frac{\text{Sum of all the given observations}}{\text{Number of these observations}}$$

Sum of all the given observation = Average × Number of these observations

The average of first n even numbers
= (n + 1)

The average of first n odd numbers
= n

The average of first n natural numbers
$= \left(\frac{n+1}{2}\right)$

1. Find the average of first 20 natural numbers

(a) 11 (b) 12.5 (c) 10.5 (d) 11.5

2. What is the average of the following numbers?
12, 5, 10, 3 and 8

(a) 7.6 (b) 76 (c) 10.5 (d) 9.5

3. What is the average of 4.2, 2.7, 5.6 and 8.6 ?

(a) 5.25 (b) 5.275
(c) 5.225 (d) 6.275

4. The height of four students are 150 cm, 160 cm, 158 cm and 162 cm.

(a) 158 cm (b) 156.5 cm
(c) 157 cm (d) 157.5 cm

5. The average weights of three students are 42.5 kg, 54 kg, and 58 kg. Find the average weight of the students.

(a) 51.5 kg (b) 52.5 kg
(c) 51 kg (d) 50 kg

6. Find the average of all the prime numbers between 60 and 80.

(a) 68.4 (b) 70.2 (c) 72.8 (d) 74.6

7. Find the mean of the first ten even numbers.

(a) 10 (b) 11 (c) 9 (d) 5.5

8. Find the average of first 9 prime number.

(a) 9.8 (b) 10.3
(c) 12.7 (d) 11.1

9. If average of the following marks obtained by students of Class-V is 35.
26, 45, 37, 43, 49, 20, x, 22 and 30.
Find unknown mark i.e.x.

(a) 33 (b) 49 (c) 37 (d) 43

10. The ages of 5 children are 13, 15, 11, 9 and 8 years respectively. Find their average age.

(a) 10.6 years (b) 11.2 years
(c) 10.2 years (d) 11.8 years

11. The average age of 5 boys is 13 years. One more boy joins them and the average age becomes 12 years. Find the age of the boy who joins last.

(a) 5 years (b) 6 years
(c) 7 years (d) 8 years

12. The marks obtained by a student in five examinations are 90, 92, 93, 95 and 90. Find his average marks.

(a) 91 (b) 92 (c) 93 (d) 94

13. **The average age of a class of 40 students is 18 years. When a teacher joins them their average age becomes 19 years. Find the teacher's age.**
(a) 57 years (b) 61 years
(c) 53 years (d) 59 years

14. **If the average of 14, 17, 21, 24, 26 and x is 20, then find the value of x.**
(a) 16 (b) 17
(c) 18 (d) 19

15. **Find the average of 12 numbers if the average of the first 8 numbers is 21 and the average of the last four number is 18.**
(a) 19 (b) 19.5
(c) 20 (d) 20.5

16. **A car travels 58 km in the first hour, 62 km in the second hour and 75 km in the third hour. Find the average speed of the car.**
(a) 65 km/hr (b) 63 km/hr
(c) 64 km/hr (d) 67 km/hr

17. **The average age of 25 students of a class is 13 years. Out of them, the average age of 15 students is 18 years. Find the average age of the remaining students.**
(a) 4.5 years (b) 5.2 years
(c) 5.5 years (d) 5.7 years

18. **The depth of a swimming pool at six different places is 344 cm, 275 cm, 192 cm, 147 cm, 233 cm and 300 cm. Find the average depth of the swimming pool.**
(a) 236.5 cm (b) 242 cm
(c) 248.5 cm (d) 252 cm

19. **The population of four towns is 35560, 30000, 27500 and 25600 respectively. What is the average population of the town?**
(a) 29665 (b) 28865
(c) 29225 (d) 28485

20. **The average age of 3 sisters is 15 years. If the ages of two sisters are 12 years and 15 years, then the age of the third sister is**
(a) 21 years (b) 17 years
(c) 18 years (d) 16 years

21. **What is the average of the first 15 counting numbers?**
(a) 8 (b) 15 (c) 16 (d) 7.5

22. **The average weight of 20 boys in a class is 160 kg and that of the remaining 5 boys is 50 kg. Find the average weight of all the boys in the class.**
(a) 138 kg (b) 183 kg
(c) 140 kg (d) 150 kg

23. **The average marks obtained by 7 students in a group is 226. If the marks obtained by six of them are 340, 180, 260, 56, 275 and 307 respectively, find the marks obtained by the seventh student.**
(a) 160 (b) 162 (c) 163 (d) 164

24. **The average weight of 6 boys gets increased by 5 kg if a boy having weight 20 kg is replaced by a new boy. What is the weight of the new boy?**
(a) 41 kg (b) 50 kg (c) 65 kg (d) 49 kg

25. **Average of 1, 3, 5, 7, 9, 11, 13 is**
(a) 7 (b) 8 (c) 7.5 (d) 8.5

26. **A library has an average of 510 visitors on Sundays and 240 on other days. The average number of visitors in a month of 30 days starting with Sunday is**

(a) 280 (b) 285 (c) 290 (d) 295

27. **A batsman makes a score of 87 runs in the 17th match and thus increases his average by 3. Find his average after the 17th match.**

(a) 36 (b) 37 (c) 38 (d) 39

28. **The average weight of 16 boys in a class is 50.25 kg and that of the remaining 8 boys is 45.15 kg. Find the average weight of all the boys in the class.**

(a) 47.55 kg (b) 48 kg
(c) 48.55 kg (d) 49.25 kg

29. **Average of 20 results is 18. If 3 is subtracted from each result, then what will be the new average?**

(a) 21 (b) 15 (c) 16 (d) 17

30. **What is the average of first seven composite numbers ?**

(a) 8 (b) 8.5 (c) 7.5 (d) 9

31. **What is the average of first six multiples of 15 ?**

(a) 52 (b) 52.5 (c) 51 (d) 51.5

32. **What is the average of all the even numbers from 50 to 60 ?**

(a) 50 (b) 55 (c) 60 (d) 60.5

33. **What is the average of all the odd numbers from 25 to 40 ?**

(a) 31 (b) 31.5 (c) 32 (d) 32.5

34. **Find the average of all the multiples of twelve lying between 50 to 150.**

(a) 102 (b) 101
(c) 100 (d) 104

35. **The average of $5\frac{1}{5}$ and $2\frac{3}{10}$ is.**

(a) $4\frac{15}{20}$ (b) $3\frac{5}{10}$ (c) $3\frac{15}{20}$ (d) $2\frac{15}{20}$

36. **The average of 16 numbers is 75. Find the sum ?**

(a) 1100 (b) 1200
(c) 1210 (d) 1285

37. **The average of P numbers is q and the average of q numbers is P. Find the average of all these numbers.**

(a) $\frac{2pq}{p+q}$ (b) $\frac{pq}{p+q}$
(c) $\frac{p+q}{pq}$ (d) $\frac{pq+qp}{p+q}$

38. **The average of 5 numbers is 30. If one number is excluded from them, then the average is decreased by 2. Find the excluded number.**

(a) 30 (b) 35 (c) 32 (d) 38

39. **The average of 11 numbers is 25. If 5 is added to each number, then the new average will be.**

(a) 28 (b) 30 (c) 32 (d) 30.5

ANSWER-KEY														
1.	(C)	**2.**	(A)	**3.**	(B)	**4.**	(D)	**5.**	(A)	**6.**	(B)	**7.**	(B)	**8.**	(D)
9.	(D)	**10.**	(B)	**11.**	(C)	**12.**	(B)	**13.**	(D)	**14.**	(C)	**15.**	(C)	**16.**	(A)
17.	(C)	**18.**	(C)	**19.**	(A)	**20.**	(C)	**21.**	(A)	**22.**	(A)	**23.**	(D)	**24.**	(B)
25.	(A)	**26.**	(B)	**27.**	(D)	**28.**	(C)	**29.**	(B)	**30.**	(D)	**31.**	(B)	**32.**	(B)
33.	(C)	**34.**	(A)	**35.**	(C)	**36.**	(B)	**37.**	(D)	**38.**	(D)	**39.**	(B)		

1. Express $\frac{7}{8}$ in the form of ratio in the Simplest form.
(a) 1 : 8 (b) 1 : 7
(c) 7 : 8 (d) 8 : 7

2. $5\frac{3}{4}\%$ is expressed in the form of the ratio as :
(a) 3 : 4 (b) 53 : 40
(c) 23 : 40 (d) 23 : 400

3. $33\frac{1}{3}\% = ?$
(a) 1 : 3 (b) 2 : 3
(c) 3 : 1 (d) 3 : 2

4. The simplest form of 50 : 175 is
(a) 2 : 7 (b) 1 : 4
(c) 1 : 5 (d) 2 : 3

5. The simplest form of the ratio $\frac{3}{5} : \frac{5}{2}$ is
(a) 6 : 25 (b) 15 : 28
(c) 25 : 24 (d) 36 : 25

6. Write $\frac{3}{4} : \frac{1}{3} : \frac{2}{5}$ in the simplest form.
(a) 45 : 10 : 36 (b) 25 : 10 : 33
(c) 35 : 25 : 16 (d) 45 : 20 : 24

7. The simplest form of the ratio $3\frac{2}{5} : 2\frac{1}{3}$ is
(a) 35 : 23 (b) 35 : 51
(c) 51 : 35 (d) 30 : 51

8. The simplest form of the ratio $1\frac{2}{3} : 2\frac{3}{4} : 3\frac{4}{5}$ is
(a) 100 : 120 : 157
(b) 100 : 165 : 228
(c) 165 : 100 : 228
(d) 268 : 165 : 100

9. Find the ratio between 25 cm to 2.5 metre
(a) 1 : 5 (b) 1 : 8
(c) 1 : 10 (d) 1 : 15

10. Find the ratio between 275 gm to 2 kg.
(a) 3 : 10 (b) 11 : 80
(c) 25 : 37 (d) 33 : 52

11. Find 45 minutes as a ratio of 3 hour
(a) 1 : 4 (b) 10 : 57
(c) 11 : 75 (d) 12 : 23

12. Find the ratio of 90 cm to 1.5 m.
[Sainik School 2017]
(a) 2 : 3 (b) 2 : 5 (c) 3 : 5 (d) 4 : 5

13. If a = 2, b = 2 and c = 4, then find the value of a(b + c) : b(a + c).
(a) 5 : 9 (b) 7 : 9 (c) 9 : 5 (d) 9 : 7

14. If $x : y = 4 : 5$, then $(3x + y) : (5x + 3y) =$
(a) 3 : 5 (b) 5 : 3
(c) 17 : 35 (d) 35 : 17

15. If $x : y = 2 : 1$, then $(x^2 - y^2) : (x^2 + y^2) = ?$
(a) 3 : 5 (b) 5 : 3
(c) 1 : 3 (d) 3 : 1

16. If $\frac{a}{b} = 0.25$, then $\frac{2b-a}{2b+a} + \frac{2}{9} = ?$
(a) 0 (b) 1 (c) $\frac{4}{9}$ (d) 2

17. If $A : B : C = 2 : 3 : 4$, Then $\frac{A}{B} : \frac{B}{C} : \frac{C}{A}$ is equal to:
(a) 8 : 9 : 16 (b) 8 : 9 : 12
(c) 8 : 9 : 24 (d) 4 : 9 : 16

18. If $\frac{2a}{3b} = \frac{1}{2}$, then $\frac{a+b}{a-b}$ =?

(a) – 3 (b) 3 (c) 5 (d) 7

19. If $a : b = 2 : 3$ and $b : c = 4 : 5$, then $a : b : c$ = ?

(a) 8 : 12 : 15 (b) 2 : 3 : 5

(c) 2 : 4 : 5 (d) 8 : 12 : 20

20. If $a : b = 3 : 4$ and $b : c = 6 : 7$, then $a : b : c$ =?

(a) 9 : 12 : 14 (b) 6 : 8 : 21

(c) 3 : 6 : 21 (d) 3 : 4 : 7

21. If $a : b = 1\frac{1}{2} : 2\frac{1}{4}$ and $b : c = 2 : 3\frac{1}{2}$, then what is $a : b : c$ equal to ?

(a) 12 : 8 : 21 (b) 8 : 21 : 12

(c) 8 : 12 : 21 (d) 21 : 8 : 12

22. If $A = \frac{1}{4} B$ and $B = \frac{1}{2} C$, then A: B: C is

(a) 8 : 4 : 1 (b) 4 : 2 : 1

(c) 1 : 4 : 8 (d) 1 : 2 : 4

23. Mean proporational of 32 and 2 is :

(a) 1 (b) 8

(c) 16 (d) 64

24. If $a : b = c : d = e : f = 1 : 2$ then $(3a + 5c + 7e) : (3b + 5d + 7f)$ is equal to

(a) 2 : 1 (b) 1 : 2

(c) 1 : 4 (d) 3 : 2

25. If A and B are in the ratio 3 : 4 and B and C in the ratio 12 : 13 then A and C will be in the ratio

(a) 3 : 13 (b) 9 : 13

(c) 36 : 13 (d) 13 : 9

26. If $a : b = 7 : 9$ and $b : c = 15 : 7$, then what is $a : c$

(a) 3 : 5 (b) 5 : 3

(c) 1 : 3 (d) 1 : 5

27. $A : B = 4 : 9$ and $A : C = 2 : 3$, then $(A + B) : (A + C)$ is

(a) 10 : 13 (b) 13 : 10

(c) 13 : 15 (d) 15 : 13

28. If $a : b = 2 : 3$ and $b : c = 4 : 5$, find $a^2 : b^2 : bc$.

(a) 4 : 9 : 45 (b) 16 : 36 : 45

(c) 16 : 36 : 20 (d) 4 : 36 : 20

29. If $2A = 3B = 4C$, then $A : B : C$ =?

(a) 3 : 4 : 5 (b) 2 : 3 : 4

(c) 4 : 3 : 2 (d) 6 : 4 : 3

30. If $\frac{a}{3} = \frac{b}{4} = \frac{c}{7}$ then $\frac{a+b+c}{c}$ is equal to

(a) 0 (b) 1 (c) 2 (d) 3

31. If $A : B = 1 : 2$ and $B : C = 3 : 4$ and $C : D = 5 : 6$, find $D : C : B : A$ =?

(a) 6 : 5 : 4 : 2 (b) 6 : 3 : 2 : 1

(c) 6 : 4 : 2 : 1 (d) 48 : 40 : 30 : 15

32. If $A : B = \frac{1}{2} : \frac{3}{8}$, $B : C = \frac{1}{3} : \frac{5}{9}$, and $C : D = \frac{5}{6} : \frac{3}{4}$, then the ratio $A : B : C : D$ is

(a) 6 : 4 : 8 : 10 (b) 6 : 8 : 9 : 10

(c) 8 : 6 : 10 : 9 (d) 4 : 8 : 6 : 10

33. If $\frac{2}{3}$ of $A = 75\%$ of $B = 0.6$ of C Then $A : B : C$ is

(a) 2 : 3 : 3 (b) 3 : 4 : 5

(c) 4 : 5 : 6 (d) 9 : 8 : 10

34. If $x : y = 2 : 3$ and $2 : x = 1 : 2$, then the value of y is

(a) $\frac{3}{2}$ (b) $\frac{1}{3}$ (c) $\frac{2}{3}$ (d) 6

35. Find the value of $m, if\ 3, 18, m, 42$ are in Proportion.

[Sainik School 2021]

(a) 6 (b) 54 (c) 7 (d) 252

36. If 88, 8, x and 11 are in Proportion, then find the value of x.
[Sainik School 2010]
(a) 81 (b) 64 (c) 121 (d) 144

37. Find the value of x, if $\frac{1}{9} : x :: \frac{1}{3} : \frac{1}{4}$.
[Sainik School 2009]
(a) $\frac{1}{6}$ (b) $\frac{1}{8}$ (c) $\frac{1}{12}$ (d) $\frac{1}{18}$

38. Fourth proportional to 6, 9 and 20 is
(a) 5 (b) 23 (c) 30 (d) 45

39. Mean proportional of 16 and 25 is :
(a) 10 (b) 8 (c) 16 (d) 20

40. Third proportional to 16 and 4 is :
(a) 1 (b) 4 (c) 12 (d) 64

41. The ratio of two numbers is 10 : 7 and their difference is 105. The sum of the numbers is :
(a) 595 (b) 805 (c) 1190 (d) 1610

42. The ratio between male population and female population of a village is 17 : 13. if the number of males is 280 more than that of the females, find total size of population in the village.
(a) 1190 (b) 910 (c) 1120 (d) None

43. A sum of ₹ 9000 is to be distributed among A, B and C in the ratio 4 : 5 : 6. What will the difference between $A's$ and $C's$ shares ?
(a) ₹ 600 (b) ₹ 1000
(c) ₹ 900 (d) ₹ 1200

44. ₹ 750 are divided among A, B and C in such a manner that $A : B = 5 : 2$ and $B : C = 7 : 13$ What is $A's$ share ?
(a) ₹ 350 (b) ₹ 260
(c) ₹ 140 (d) ₹ 250

45. If ₹ 26,00 is divided among three person A, B and C in the ratio $\frac{1}{2} : \frac{1}{3} : \frac{1}{4}$, How much does A get ?
(a) ₹ 600 (b) ₹ 800
(c) ₹ 1000 (d) ₹ 1200

46. A person distributes his pens among four friends A, B, C, D in the ratio $\frac{1}{3} : \frac{1}{4} : \frac{1}{5} : \frac{1}{6}$. What is the minimum number of pens that the person should have ?
(a) 45 (b) 57
(c) 65 (d) 75

47. The sum of two numbers is 40 and their difference is 4. The ratio of the numbers is :
(a) 21 : 19 (b) 22 : 9
(c) 11 : 9 (d) 11 : 18

48. The ratio between the two numbers is 8 : 3. If the first number is 88 then the second number is
(a) 33 (b) 45 (c) 54 (d) 36

49. What must be added to each term of the ratio 2 : 5 so that it may equal to 5 : 6 ?
(a) 12 (b) 78 (c) 65 (d) 13

50. What number should be subtracted from both terms of the ratio 11 : 15 so as to make it as 2 : 3 ?
(a) 2 (b) 3 (c) 4 (d) 5

51. The total age of three persons is 60 Years. The ages are in the ratio of 1 : 2 : 3. What is the age of the eldest person ? [Sainik School 2014]
(a) 20 years (b) 25 years
(c) 30 years (d) 40 years

52. **A number is divided into two parts such that their sum is 246 and the ratio between them is 2 : 1. Find the greater part.** **[Sainik School 2013]**

(a) 148 (b) 154 (c) 164 (d) 172

53. **In an NCC Camp, 1200 trainees are participating out of which 900 are selected for Republic Day Camp. What is the ratio between the number of selected and non-selected cadets.** **[Sainik School 2021]**

(a) 300 : 120 (b) 4 : 1

(c) 3 : 1 (d) 120 : 130

54. **Ram had ₹ 40 with him. He gave ₹ 16 to Lalit and ₹ 24 to Harish. In what ratio did he distribute the money** **[Sainik School 2006]**

(a) 2 : 3 (b) 3 :4

(c) 1 : 3 (d) 3 : 8

55. **In the given figure, find the ratio of number of triangles to the number of circles inside the rectangle and number of squares. to all the figures the rectangle.** **[Sainik School 2020]**

(a) $\frac{3}{2}, \frac{2}{7}$ (b) $\frac{3}{7}, \frac{2}{7}$

(c) $\frac{2}{7}, \frac{2}{7}$ (d) 3, 2

56. **A, B and C have a total of ₹ 1500. The ratio of the money between A and B is 4 : 5. If C has ₹ 600, then calculate the shares of A and B.** **[Sainik School 2011]**

(a) ₹ 350, ₹ 550

(b) ₹ 375, ₹ 525

(c) ₹ 400, ₹ 500

(d) ₹ 425, ₹ 475

57. **The ratio of income to expenditure of Radha is 7 : 5. If she saves ₹ 2000 a month, what is her annual income** **[Sainik School 2019]**

(a) ₹ 144000 (b) ₹ 60000

(c) ₹ 95000 (d) ₹ 84000

58. **A, B and C divide an amount themselves in the ratio of 4 : 7 : 9 respectively. If B's share in the amount is ₹ 2989, what is the total amount.** **[Sainik School 2010]**

(a) ₹ 9820 (b) ₹ 8540

(c) ₹ 2720 (d) ₹ 8640

59. **The ratio of milk and water in a mixture of 84 litres is 3 : 4, What will be the new ratio if 3 litres each of milk and water is added to the mixture ?**

(a) 7 : 9 (b) 4 : 5

(c) 13 : 17 (d) 9 : 16

60. **In a mixture of 63 litres, the milk and water are in the ratio 7 : 2. If 7 litres of water is added to the mixture, find the ratio in the resulting mixture.**

(a) 3 : 1 (b) 4 : 1

(c) 7 : 3 (d) 7 : 5

61. **A sum of ₹ 4800 was divided among. A, B and C in the ratio 9 : 8 : 7. If an amount of ₹ 200 is added to the share of each, what will be their new ratio ?**

(a) 7 : 8 : 9 (b) 1 : 1 : 1

(c) 10 : 9 : 8 (d) None

62. **If ratio of boys and girls in a class is 7 : 5, which of the following cannot be the total number of student in the class ?**

(a) 36 (b) 50 (c) 60 (d) 120

63. If the cost of 9 mangoes and 5 apples is equal to cost of 7 mangoes and 8 apples. Find the ratio between the cost of 1 mango and the cost of 1 apple.

(a) 2 : 5 (b) 3 : 2

(c) 5 : 3 (d) 9 : 4

64. A and B are in the ratio 4 : 5 and the difference of their squares is 81, What is the value of A ?

(a) 36 (b) 12 (c) 45 (d) 15

65. A mixture of milk and water is such that the quantity of milk is $\frac{3}{5}$ that of water. The proportion of milk in the mixture is :

(a) $\frac{1}{8}$ (b) $\frac{1}{2}$

(c) $\frac{3}{8}$ (d) $\frac{5}{8}$

66. The sides of a triangle are in the ratio $\frac{1}{2} : \frac{1}{3} : \frac{1}{4}$ and its perimeter is 104 cm. The length of the longest side (in cm) is

(a) 26 (b) 32 (c) 48 (d) 52

67. The marks obtained by Mukesh in English, Mathematics and Science are in the ratio $\frac{1}{2} : \frac{1}{3} : \frac{3}{5}$. If his total score is 860, his marks in English are

(a) 150 (b) 300 (c) 250 (d) 400

68. The angles of a triangle are in the ratio 1 : 2 : 3. The greatest angle is

(a) 60° (b) 30° (c) 45° (d) 90°

69. Two numbers are in the ratio 2 : 3 If 3 be added to both of them, then their ratio becomes 3 : 4. Find the sum of the numbers.

(a) 10 (b) 15 (c) 20 (d) 25

ANSWER-KEY													
1.	(C)	**2.**	(D)	**3.**	(A)	**4.**	(A)	**5.**	(A)	**6.**	(D)	**7.**	(C)
8.	(B)	**9.**	(C)	**10.**	(B)	**11.**	(A)	**12.**	(C)	**13.**	(B)	**14.**	(C)
15.	(A)	**16.**	(B)	**17.**	(C)	**18.**	(D)	**19.**	(A)	**20.**	(A)	**21.**	(C)
22.	(C)	**23.**	(B)	**24.**	(B)	**25.**	(B)	**26.**	(B)	**27.**	(B)	**28.**	(B)
29.	(D)	**30.**	(C)	**31.**	(C)	**32.**	(C)	**33.**	(D)	**34.**	(D)	**35.**	(C)
36.	(C)	**37.**	(C)	**38.**	(C)	**39.**	(D)	**40.**	(A)	**41.**	(A)	**42.**	(D)
43.	(D)	**44.**	(A)	**45.**	(D)	**46.**	(B)	**47.**	(C)	**48.**	(A)	**49.**	(D)
50.	(B)	**51.**	(C)	**52.**	(C)	**53.**	(C)	**54.**	(A)	**55.**	(A)	**56.**	(C)
57.	(D)	**58.**	(B)	**59.**	(C)	**60.**	(C)	**61.**	(C)	**62.**	(B)	**63.**	(B)
64.	(B)	**65.**	(C)	**66.**	(C)	**67.**	(B)	**68.**	(D)	**69.**	(B)		

DIRECT & INVERSE VARIATION

1. If x is said to be directly proportional to y then

(a) x + y is constant
(b) x – y is constant
(c) x × y is constant
(d) x/y is constant

2. If x is said to be inversely proportional to y then

(a) x + y is constant
(b) x – y is constant
(c) x × y is constant
(d) x/y is constant

3. If the price of 8 packets is ₹ 160, then the cost of 12 packets:

(a) ₹ 180
(b) ₹ 200
(c) ₹ 220
(d) ₹ 240

4. 10 kg of wheat costs ₹ 150. Find the cost of 25 kg of wheat ?

(a) ₹ 250 (b) ₹ 275
(c) ₹ 300 (d) ₹ 375

5. A truck driver can covers 10 km distance in 2 litres of petrol. How much distance will he cover in 5 times of petrol.

(a) 15 km (b) 50 km
(c) 25 km (d) 30 km

6. If the cost of 1 notebook is ₹ 100 then cost of 6 notebooks.

(a) ₹ 600 (b) ₹ 500
(c) ₹ 400 (d) ₹ 300

7. 20 men can do a piece of work in 8 days. In how many days can 16 men do the same work ?

(a) 30 days (b) 20 days
(c) 10 days (d) 40 days

8. 10 persons can finish a work in 18 days. In how many days 15 person will complete the same work ?

(a) 15 days (b) 12 days
(c) 10 days (d) 16 days

9. There are 20 animals in a farm and food is enough, for 10 days if 10 more animals joins them then food will last after

(a) 12 days (b) 10 days
(c) 15 days (d) $\frac{20}{3}$ days

10. In a family of 300 persons food is enough for 20 days if 50 persons leave the house then food will last for how many days ?

(a) 20 days (b) 24 days
(c) 30 days (d) 36 days

11. A machine can type 12 pages in 1 minute. In how many minutes it can type 5760 pages

(a) 7 hours (b) 8 hours
(c) $8\frac{1}{2}$ hours (d) 9 hours

12. If the cost of 420 oranges is ₹ 2520 then the cost of 8 dozen oranges is :

(a) ₹ 480 (b) ₹ 528
(c) ₹ 540 (d) ₹ 576

13. If 16 bags cost ₹ 1520 then the cost of 3 bags will be :

(a) ₹ 240 (b) ₹ 255
(c) ₹ 270 (d) ₹ 285

14. If x varies with y directly. The value of P is

x	12	p
y	8	36

(a) 24 (b) 32 (c) 48 (d) 54

15. If the cost of 20 books is ₹ 180 how much will 36 books cost ?

(a) ₹ 234 (b) ₹ 324
(c) ₹ 480 (d) ₹ 360

16. A machine can fill 490 bottles is 7 hours, then how many bottles will it fill in 6 hours.

(a) 100 (b) 300 (c) 420 (d) 560

17. If x varies with y inversely. The value of x is 15 when y = 35, find the value of y when x = 25

(a) 16 (b) 15 (c) 21 (d) 28

18. 15 workers can build a wall in 21 hours. How many workers will be required for the same work to complete this work in 35 hours ?

(a) 8 hours
(b) 9 hours
(c) 10 hours
(d) 12 hours

19. If x varies with y inversely. The value of p is

x	12	p
y	15	4

(a) 36 (b) 45 (c) 48 (d) 54

20. 6 pumps working together can fill a tank in 35 minutes. How long will it take to empty the tank if 5 such pumps are working together ?

(a) 36 minutes
(b) 42 minutes
(c) 21 minutes
(d) 28 minutes

21. The cost of 6 mangoes is ₹ 90. How many mangoes can be bought for ₹ 375.

(a) 20 (b) 15
(c) 25 (d) 30

22. 12 pumps working together fill a tank in 1 hours 20 minutes. How long will it take to empty the tank if such 8 pumps are working together ?

(a) 2 hours (b) 3 hours
(c) 4 hours (d) 5 hours

23. The cost of a dozen Banana is ₹ 90. Find the cost of 20 such Banana.

(a) ₹ 140 (b) ₹ 150
(c) ₹ 160 (d) ₹ 175

24. A farmer has enough food to feed 30 animals for 6 days. How long would the food last if there were 10 animals less in the group.

(a) 12 days (b) 9 days
(c) 18 days (d) 15 days

25. There is ration for 540 students for 160 days but after 10 days 60 more students join them then how many days the ration would be enough ?

(a) 135 days (b) 160 days
(c) 150 days (d) 175 days

26. There is ration for 360 students for 160 days but after 10 days 60 students left them. How many days the ration would be enough ?

(a) 135 days (b) 160 days
(c) 150 days (d) 180 days

27. **The cost of a dozen headphones ₹ 78,564. Samar wants to buy five headphones. Find the amount to be paid by him to get five headphones ?**

(a) ₹ 40,675 (b) ₹ 32,735
(c) ₹ 32,375 (d) ₹ 43,675

28. **A man can do a work in 12 days working 8 hours per day. If he works 6 hours per day, what would be the number of days taken by him ?**

(a) 12 days (b) 14 days
(c) 16 days (d) 18 days

29. **How many persons will be able to live for 50 days on food which is sufficient for 400 persons for 10 days?**

(a) 80 (b) 8 (c) 40 (d) 200

30. **The cost of 7 chairs is equal to the cost of 2 tables. The cost of a table is ₹ 1050. The cost of a chair will be:**

(a) ₹ 105 (b) ₹ 150
(c) ₹ 300 (d) ₹ 525

31. **Cost of 4 dozen bananas is ₹ 60. How many bananas can be purchased for ₹ 12.50 ?**

(a) 10 (b) 15 (c) 12 (d) 18

32. **10 persons can finish a work in 15 days. In how many days, the same work can be done by 25 persons ?**

(a) 6 days (b) 12 days
(c) 15 days (d) 18 days

33. **If 10 men can do a piece of work in 4 days. How many men will be required to get the same work done in 5 days ?**

(a) 10 (b) 8 (c) 40 (d) 12

34. **The cost of a dozen pens is ₹ 90. Find the cost of 20 such pens.**

(a) ₹ 140 (b) ₹ 150
(c) ₹ 160 (d) ₹ 175

35. **The cost of 103 chairs is ₹ 29335. Find the cost of 1031 chairs.**

(a) ₹ 293634.80
(b) ₹ 293564.60
(c) ₹ 293438.40
(d) ₹ 293274.40

36. **There are 24 laddoos in 2 kg. How many laddoos will be there in 8 kg ?**

(a) 84 (b) 90 (c) 96 (d) 108

37. **A man takes 3 days to walk 45 km. In how many days will he walk 75 km?**

(a) 1 (b) 25 (c) 5 (d) 15

38. **12 persons can finish a piece of work in 15 days. In how many days will the same work be completed by 20 persons?**

(a) 15 days (b) 9 days
(c) 30 days (d) 20 days

39. **Weight of one coin of ₹ 5 is 9 g. In Anu's bag, the total weight of ₹ 5 coins is 9 kg. What is the number of coins in Anu's bag?**

(a) 10 (b) 100
(c) 1000 (d) 10000

40. **Jatin reads a 200 pages book in 10 hours. How many hours will he take to read a 320 pages book ?**

(a) 24 hours (b) 16 hours
(c) 18 hours (d) 32 hours

41. **Mohan drinks 250 ml milk everyday. How much milk will he drink in 4 days?**

(a) 10 mℓ (b) 100 mℓ
(c) 2 litres (d) 1 litre

42. **What is the weight of two dozen biscuits if each biscuit weighs 4 g ?**

(a) 24 g (b) 64 g (c) 48 g (d) 96 g

43. If the cost of 9 ice-creams is ₹ 67.50, then what will be the cost of 100 ice-creams ?

(a) ₹ 75 (b) ₹ 750
(c) ₹ 7500 (d) ₹ 655

44. If one dozen notebooks cost ₹ 252, find the cost of 10 notebooks.

(a) ₹ 210 (b) ₹ 200
(c) ₹ 189 (d) ₹ 168

45. A mechanic earns ₹ 36000 on 9 cars. How much will he earn in 1 day, if in a day he receives 27 cars ?

(a) ₹ 1,08,000 (b) ₹ 1,80,000
(c) ₹ 1,00,800 (d) ₹ 1,00,080

46. The cost of 6 kg rice is equal to the cost of 8 kg wheat. If the cost of wheat is ₹ 6 per kg, then the cost of 1 kg rice is:

(a) ₹ 6 (b) ₹ 8 (c) ₹ 12 (d) ₹ 14

47. A fruit shop sells bananas at ₹ 40 per dozen or a banana for ₹ 5. How much will it cost to buy 99 bananas?

(a) ₹ 335 (b) ₹ 320
(c) ₹ 300 (d) ₹ 495

48. A shopkeeper sells a ball pen for ₹ 12 or a packet of 10 ball pens for ₹ 100. Smt. Swati bought 24 ball pens. What is the cost price of these ball pens?

(a) ₹ 212 (b) ₹ 238
(c) ₹ 248 (d) ₹ 258

49. For a shirt, the cloth required must be 2 m 75 cm. Then, how much cloth is required for 6 such shirts?

(a) 15 m 50 cm
(b) 16 m 50 cm
(c) 18 m
(d) 21 m

50. A man purchases rice at the rate of ₹ 80 per kg. How much rice can he purchase for ₹ 220 ?

(a) 3 kg (b) 2.750 kg
(c) 2.500 kg (d) 2.250 kg

51. 10 kg of sugar costs ₹ 250. Find the cost of 15 kg of sugar?

(a) ₹ 375 (b) ₹ 350
(c) ₹ 275 (d) ₹ 315

52. What would be the price of seven chairs, if the price of one chair is ₹ 7642.45 ?

(a) ₹ 53497.22
(b) ₹ 53497.15
(c) ₹ 53499.15
(d) ₹ 53597.15

53. The price of 12 kg potatoes is ₹ 360. Then, the price of 8 kg potatoes is:

(a) ₹ 180 (b) ₹ 240
(c) ₹ 300 (d) ₹ 288

54. There are 14 rows in a park and 420 cars stand in every row. How many cars can stand in the park?

(a) 5880 (b) 434 (c) 406 (d) 30

55. A car travels 10 km in 1 litre of petrol. How much distance will it cover in 3 litres of petrol.

(a) 10 km (b) 20 km
(c) 30 km (d) 40 km

56. A truck requires 108 litres of diesel for covering a distance of 594 km. How much diesel will be required by the truck to cover a distance of 1650 km?

(a) 3000 litres
(b) 108 litres
(c) 300 litres
(d) 165 litres

57. Trisha is arranging fruit juice for 40 classmates. She wants to serve 250 ml juice to each of the classmates. What is the minimum number of tetrapack she requires for serving if each tetrapack contains 2.5 L of juice?

(a) 2.5 (b) 3 (c) 4 (d) 10

58. Anil had 78.6 m fabric which was just enough to make one set of uniform for 12 students. How much fabric would be used to make one uniform ?

(a) 6.05 m (b) 6.65 m
(c) 6.55 m (d) 6.25 m

59. 21 Goats eat as much as 15 cows. How many goats eat as much as 35 cows?

(a) 38 (b) 49
(c) 37 (d) 41

60. The cost of 13 school bags is ₹ 1950 then what is the cost of such 4 bags ?

(a) ₹ 500
(b) ₹ 525
(c) ₹ 550
(d) ₹ 600

ANSWER-KEY													
1.	(D)	**2.**	(C)	**3.**	(D)	**4.**	(D)	**5.**	(B)	**6.**	(A)	**7.**	(C)
8.	(B)	**9.**	(D)	**10.**	(B)	**11.**	(B)	**12.**	(D)	**13.**	(D)	**14.**	(D)
15.	(B)	**16.**	(C)	**17.**	(C)	**18.**	(B)	**19.**	(A)	**20.**	(B)	**21.**	(C)
22.	(A)	**23.**	(B)	**24.**	(B)	**25.**	(A)	**26.**	(D)	**27.**	(B)	**28.**	(C)
29.	(A)	**30.**	(C)	**31.**	(A)	**32.**	(A)	**33.**	(B)	**34.**	(B)	**35.**	(A)
36.	(C)	**37.**	(C)	**38.**	(B)	**39.**	(C)	**40.**	(B)	**41.**	(D)	**42.**	(D)
43.	(B)	**44.**	(A)	**45.**	(A)	**46.**	(B)	**47.**	(A)	**48.**	(C)	**49.**	(B)
50.	(B)	**51.**	(A)	**52.**	(B)	**53.**	(B)	**54.**	(A)	**55.**	(C)	**56.**	(C)
57.	(C)	**58.**	(C)	**59.**	(B)	**60.**	(D)						

1. **Convert 72 km/hr into m/sec.**
   (a) 18 m/sec (b) 20 m/sec
   (c) 25 m/sec (d) 30 m/sec

2. **Convert 126 km/hr into m/sec.**
   (a) 35 m/sec (b) 42 m/sec
   (c) 49 m/sec (d) 56 m/sec

3. **Convert 25 m/sec into km/hr.**
   (a) 72 km/hr (b) 80 km/hr
   (c) 90 km/hr (d) 108 km/hr

4. **Convert 65 m/sec into km/hr.**
   (a) 162 km/hr (b) 243 km/hr
   (c) 231 km/hr (d) 234 km/hr

5. **A car travels 25 km in 1 hour then find the speed of car.**
   (a) 25 km/hr (b) 30 km/hr
   (c) 15 km/hr (d) 20 km/hr

6. **A bus travels 32 km in 1 hour then find the speed of car.**
   (a) 25 km/hr (b) 32 km/hr
   (c) 15 km/hr (d) 24 km/hr

7. **A train travels 100 m in 1 sec then find the speed of car.**
   (a) 35 m/sec (b) 42 m/sec
   (c) 49 m/sec (d) 100 m/sec

8. **A boy is running 20 m in 1 sec then find the speed of car.**
   (a) 35 m/sec (b) 32 m/sec
   (c) 20 m/sec (d) 24 m/sec

9. **A car travels 72 km in 4 hour then find the speed of car.**
   (a) 25 km/hr (b) 30 km/hr
   (c) 18 km/hr (d) 20 km/hr

10. **A train travels 100 km in 5 hour then find the speed of car.**
    (a) 25 km/hr (b) 30 km/hr
    (c) 10 km/hr (d) 20 km/hr

11. **A runner covers 225 m in 15 sec then find the speed of runner.**
    (a) 25 m/sec (b) 15 m/sec
    (c) 10 m/sec (d) 20 m/sec

12. **A truck covers 350 m in 50 sec then find the speed of runner.**
    (a) 50 m/sec (b) 35 m/sec
    (c) 40 m/sec (d) 7 m/sec

13. **A bullet train is travelling at a speed of 92 m/sec. The speed of the train in km/hr**
    (a) 331.2 km/hr (b) 328.4 km/hr
    (c) 334.2 km/hr (d) 336.2 km/h

14. **A train covers 30 m in a second. Convert the speed of train into km/hr**
    (a) 72 km/hr (b) 80 km/hr
    (c) 90 km/hr (d) 108 km/hr

15. **A Car covers 108 km in an hour. Convert the speed of train into m/sec**
    (a) 35 m/sec (b) 30 m/sec
    (c) 49 m/sec (d) 56 m/sec

16. **Transform the speed $22\frac{1}{2}$ m/sec into km/hr**
    (a) 72 km/hr
    (b) 85 km/hr
    (c) 90 km/hr
    (d) 81 km/hr

17. A car travels 420 km in 15 hours. The speed of the car is

(a) 26 km/hr (b) 32 km/hr
(c) 28 km/hr (d) 24 km/hr

18. During a journey a cycle covers 162 km in 5 hours 24 min. Find average speed

(a) 20 km/hr (b) 30 km/hr
(c) 25 km/hr (d) 35 km/hr

19. A man covers 25 km in 2 hours 30 min. What is the speed of the man?

(a) 20 km/hr (b) 25 km/hr
(c) 15 km/hr (d) 10 km/hr

20. A train covers 200 km with speed 40 km/hr then find the time taken by the train to cover this distance.

(a) 3 hours (b) 4 hours
(c) 5 hours (d) 6 hours

21. A train covers 225 km with speed 25 km/hr then find the time taken by the train to cover this distance.

(a) 7 hours (b) 4 hours
(c) 5 hours (d) 9 hours

22. A boy covers 375 m with speed 25 m/sec then find the time taken by the boy to cover this distance.

(a) 15 sec (b) 20 sec
(c) 25 sec (d) 30 sec

23. A man covers 450 m with speed 25 m/sec then find the time taken by the boy to cover this distance.

(a) 15 sec (b) 18 sec
(c) 20 sec (d) 24 sec

24. The distance travelled by a motor cycle in 7 hours at speed of 45 km/hr

(a) 327 km (b) 315 km
(c) 337 km (d) 343 km

25. The distance travelled by a train in 6 hours at speed of 25 km/hr

(a) 150 km (b) 250 km
(c) 200 km (d) 300 km

26. An aeroplane covers 1020 km distance in an hour. How much distance will it cover in $4\frac{1}{6}$ hours.

(a) 4160 km (b) 4250 km
(c) 4280 km (d) 4260 km

27. An bullet train covers 600 km distance in an hour. How much distance will it cover in $5\frac{1}{6}$ hours.

(a) 3100 km (b) 3050 km
(c) 3000 km (d) 3150 km

28. A car covers 200 km in 5 hours and 240 km in 3 hours then find his average speed.

(a) 50 km/hr (b) 45 km/hr
(c) 55 km/hr (d) 80 km/hr

29. A man travels a distance of 24 km at a speed of 6 km/hr and another distance of 16 km at a speed of 4 km/hr then find his average speed

(a) 5 km/hr (b) 4.5 km/hr
(c) 5.6 km/hr (d) 5.2 km/hr

31. A bus travels 58 km in first hour, 62 km in second hour, 75 km in last hour find average speed of bus.

(a) 60 km/hr (b) 65 km/hr
(c) 68 km/hr (d) 80 km/hr

32. A taxi travels 38 km in first hour, 35 km in second hour, 52 km in third hour and 35 km in last hour then find average speed of taxi.

(a) 45 km/hr (b) 30 km/hr
(c) 40 km/hr (d) 35 km/hr

33. A man travels a distance at a speed of 10 km/hr and same distance at a speed of 15 km/hr then find his average speed

(a) 10 km/hr (b) 15 km/hr
(c) 12 km/hr (d) 20 km/hr

34. A train covers three successive distance of 15 km at a speed of 10 km/hr, 12 km/hr and 15 km/hr then find his average speed.

(a) 10 km/hr (b) 15 km/hr
(c) 12 km/hr (d) 20 km/hr

35. A man on tour travels first 10 km at speed 10 km/hr, second 10 km at speed 20 km/hr, third 10 km at speed 30 km/hr and last 10 km at speed 40 km/hr. Find his average speed.

(a) 18.2 km/hr
(b) 17.2 km/hr
(c) 19.2 km/hr
(d) 16.2 km/hr

36. A 160 m long train passes a standing man in 20 sec then find the speed of train.

(a) 8 m/sec (b) 9 m/sec
(c) 3 m/sec (d) 6 m/sec

37. A 180 m long train passes a standing man in 18 sec then find the speed of train.

(a) 10 m/sec (b) 24 m/sec
(c) 32 m/sec (d) 36 m/sec

38. A train travelling at a speed 20 m/sec cross a pole in 18 sec then find the length of train

(a) 300 m (b) 240 m
(c) 320 m (d) 360 m

39. A train travelling at a speed 54 km/hr cross a pole in 9 sec then find the length of train

(a) 125 m (b) 130 m
(c) 135 m (d) 140 m

40. A 225 m long train cross a man at a speed of 30 m/sec then find the time taken by train to cross the man

(a) 7 sec (b) 7.5 sec
(c) 8 sec (d) 8.5 sec

41. A 420 m long train cross a pole at a speed of 72 km/hr then find the time taken to cross the pole

(a) 17 sec (b) 18 sec
(c) 15 sec (d) 21 sec

42. A train whose length is 320 m crosses a 160 m long platfrom in 24 seconds then find the speed of the train ?

(a) 54 km/hr (b) 64 km/hr
(c) 72 km/hr (d) 84 km/hr

43. A 229 m long train crosses a 171 m long tunnel in 32 sec then find the speed of the train.

(a) 54 km/hr (b) 64 km/hr
(c) 45 km/hr (d) 66 km/hr

44. Find the time taken by a 100 m long train which is moving at a speed of 60 km/hr cross a 150 m long platform.

(a) 15 sec (b) 14 sec
(c) 18 sec (d) 20 sec

45. A 360 m long train moving at a speed of 45 km/hr. In which time it will pass through a 140 m long tunnel.

(a) 35 sec (b) 40 sec
(c) 45 sec (d) 50 sec

46. A train is moving at a speed of 60 km/hr crosses a 150 m long platform in 15 sec then find the length of train.

(a) 100 m (b) 250 m
(c) 350 m (d) 450 m

47. A train is moving at a speed of 26 m/sec crosses a 475 m long platform in 42 sec then find the length of train.

(a) 617 m (b) 607 m
(c) 823 m (d) 725 m

48. A man walks from his house at a speed of 5 km/hr and reaches his office 6 min late. If he walks at a speed of 6 km/hr he reaches his office 2 min early. The distance between his office and house.

(a) 3 km (b) 4 km
(c) 5 km (d) 6 km

49. A man walks from his house at a speed of 75 km/hr and reaches his office 15 min early. If he walks at a speed of 100 km/hr he reaches his office 25 min early. The distance between his office and house.

(a) 60 km (b) 40 km
(c) 50 km (d) 80 km

50. A man walks from his house at a speed of 3 km/hr and reaches his office 12 min late. If he walks at a speed of 4 km/hr he reaches his office 8 min late. The distance between his office and house.

(a) 750 m (b) 850 m
(c) 800 m (d) 900 m

51. A certain distance is being covered in 28 hours by walking at a speed of 5 km/hr. If speed is increased by 2 km/hr then in how much time the same distance will be covered?

(a) 30 hours (b) 20 hours
(c) 15 hours (d) 25 hours

52. An aeroplane covers a distance at a speed 0f 240 km/hr in 5 hours. To cover the same distance in $1\frac{2}{3}$ hours it must be travel at a speed of

(a) 300 km/hr (b) 360 km/hr
(c) 600 km/hr (d) 720 km/hr

1.	(B)	**2.**	(A)	**3.**	(C)	**4.**	(D)	**5.**	(A)	**6.**	(B)	**7.**	(D)
8.	(C)	**9.**	(C)	**10.**	(D)	**11.**	(B)	**12.**	(D)	**13.**	(A)	**14.**	(D)
15.	(B)	**16.**	(D)	**17.**	(C)	**18.**	(B)	**19.**	(D)	**20.**	(C)	**21.**	(D)
22.	(A)	**23.**	(B)	**24.**	(B)	**25.**	(A)	**26.**	(B)	**27.**	(A)	**28.**	(C)
29.	(A)	**31.**	(B)	**32.**	(C)	**33.**	(C)	**34.**	(C)	**35.**	(C)	**36.**	(A)
37.	(A)	**38.**	(D)	**39.**	(C)	**40.**	(B)	**41.**	(D)	**42.**	(C)	**43.**	(C)
44.	(A)	**45.**	(B)	**46.**	(A)	**47.**	(A)	**48.**	(B)	**49.**	(C)	**50.**	(C)
51.	(B)	**52.**	(D)										

1. **A can do a piece of work in 30 days and B in 60 days. If they work on it together, then in how many days will they able to do the work?**

(a) 15 days (b) 25 days
(c) 20 days (d) 30 days

2. **A can do a piece of work in 15 days and B in 30 days. If they work on it together, then in how many days will they able to do the work?**

(a) 5 days (b) 10 days
(c) 15 days (d) 20 days

3. **A can do a piece of work in 12 days and B in 36 days. If they work on it together, then in how many days will they able to do the work?**

(a) 5 days (b) 9 days
(c) 12 days (d) 15 days

4. **Uma can do a piece of work in 18 days. The same work is finished by Manju in 9 days. In how many days both of them will finish the work while working together?** (AISSEE 2014)

(a) 4 days (b) 5 days
(c) 6 days (d) 8 days

5. **Asha can finish a work in 15 days. The same work is finished by Nirmala in 12 days. In how many days, both of them will finish the same work while working together?** (AISSEE 2011)

(a) $6\frac{2}{3}$ days (b) 8 days
(c) $8\frac{1}{3}$ days (d) $9\frac{3}{4}$ days

6. **A can do a piece of a work in 30 days while B can do it in 40 days. A and B working together can do it in how many days?** (RMS 2018)

(a) $17\frac{1}{4}$ days (b) 70 days
(c) $\frac{190}{7}$ days (d) $\frac{120}{7}$ days

7. **A can do a piece of a work in 5 days while B can do it in 6 days. A and B working together can do it in how many days?** (AISSEE 2006)

(a) $2\frac{8}{11}$ days (b) $2\frac{5}{7}$ days
(c) $3\frac{5}{7}$ days (d) $3\frac{3}{7}$ days

8. **A can do a piece of a work in 10 days while B can do it in 12 days. A and B working together can do it in how many days?** (JNV 2012)

(a) $5\frac{5}{11}$ days (b) $3\frac{1}{2}$ days
(c) 6 days (d) $4\frac{2}{3}$ days

9. **A, B and C alone can do a work in 10 days, 12 days and 15 days respectively Find the time in which all three together can complete the work.**

(a) 4 days (b) 5 days
(c) 6 days (d) 8 days

10. **A, B and C alone can do a work in 10 days, 20 days and 30 days respectively Find the time in which all three together can complete the work.**

(a) $5\frac{5}{11}$ days (b) $3\frac{1}{2}$ days
(c) 6 days (d) $4\frac{2}{3}$ days

11. P, Q and R alone can do a work in 8 days, 24 days and 12 days respectively Find the time in which all three together can complete the work.

(a) 4 days (b) 6 days
(c) 8 days (d) 9 days

12. Ashu takes 12 days to complete a piece of work. Pranav takes 10 days to complete the same work. Ashu, Pranav and Ramu take 5 days to complete the same work. How many days take Ramu take to complete the same work? **(AISSEE 2011)**

(a) 70 days (b) 60 days
(c) 50 days (d) 90 days

13. A can railway track between two given stations in 16 days and B can do the same job in 12 days. With the help of C they did the job in 4 days only. Then C alone can do the job in how many days? **(AISSEE 2020)**

(a) $9\frac{1}{5}$ days (b) $9\frac{2}{5}$ days
(c) $9\frac{3}{5}$ days (d) $9\frac{4}{5}$ days

14. A can do a piece of work in 12 days and B can do the same work in 10 days if they work on it together for 4 days then what fraction of work is left?

(a) $\frac{1}{3}$ (b) $\frac{1}{2}$
(c) $\frac{1}{4}$ (d) $\frac{4}{15}$

15. A can do a piece of work in 18 days and B in 36 days. If they work on it together for 9 days then what fraction of work is left?

(a) $\frac{1}{3}$ (b) $\frac{1}{2}$
(c) $\frac{1}{4}$ (d) $\frac{1}{5}$

16. Rahul can finish $\frac{3}{5}$ part of a work in 15 days then in how many complete work will finished?

(a) 20 days (b) 25 days
(c) 18 days (d) 30 days

17. Nikhil can finish $\frac{5}{7}$ part of a work in 35 days then in how many complete work will finished?

(a) 21 days (b) 28 days
(c) 42 days (d) 49 days

18. Vijay can finish a work in 30 days then in how many days $\frac{4}{5}$ part of this work will be completed?

(a) 21 days (b) 28 days
(c) 24 days (d) 36 days

19. Tauhid can finish a work in 25 days then in how many days $\frac{4}{5}$ part of this work will be completed?

(a) 20 days (b) 18 days
(c) 15 days (d) 16 days

20. A can do a piece of work in 10 days, which B can do in 15 days. They started work together but A leaves the work after 4 days. In how many days will B finish the remaining work?

(a) 4 days (b) 5 days
(c) 6 days (d) 8 days

21. A can do a piece of work in 12 days, which B can do in 18 days. They started work together but A leaves the work after 4 days. In how many days will B finish the remaining work?

(a) 4 days
(b) 5 days
(c) 6 days
(d) 8 days

22. A can do a piece of work in 10 days, which B can do in 20 days. They started work together but A leaves the work before 4 days of completion of work. In how many days the work will be finish?

(a) 4 days (b) 5 days

(c) 6 days (d) $9\frac{1}{3}$ days

23. A can do a piece of work in 12 days, which B can do in 18 days. They started work together but A leaves the work before 7 days of completion of work. In how many days the work will be finish?

(a) 4 days (b) 5 days

(c) 6 days (d) $11\frac{2}{5}$ days

24. Two pipes can fill a tank in 20 minutes and 25 minutes. In how much time both pipes can fill the tank together?

(a) $11\frac{1}{9}$ minute

(b) $9\frac{1}{11}$ minute

(c) $9\frac{1}{9}$ minute

(d) $11\frac{1}{11}$ minute

25. Three pipes can fill a tank in 20, 15 and 30 hrs respectively. In how much time they can fill the tank together?

(a) $6\frac{2}{3}$ minute (b) $3\frac{1}{6}$ minute

(c) $9\frac{1}{9}$ minute (d) $5\frac{1}{6}$ minute

26. A and B together can do a piece of work in 8 days. B alone can do this work in 12 days. In how many days A can do this work alone?

(a) 24 days (b) 25 days

(c) 30 days (d) 36 days

27. If 10 men can do a piece of work in 4 days, how many men will be required to get the same work done in 5 days?

(a) 10 (b) 8

(c) 40 (d) 12

28. If 15 men can do a piece of work in 12 days, how many men will be required to get the same work done in 9 days?

(a) 10 (b) 15

(c) 20 (d) 12

29. If 16 persons can do a piece of work in 9 days, in how many days 18 persons can do the same work?

(a) 8 days

(b) 9 days

(c) 6 days

(d) 12 days

30. If 15 persons can do a piece of work in 10 days, in how many days 25 persons can do the same work?

(a) 8 days (b) 9 days

(c) 6 days (d) 12 days

31. Jatin reads a 200 pages of a book in 10 hours. How many hours he will take to read a 320 pages book? **(RMS 2021)**

(a) 24 hours (b) 16 hours

(c) 18 hours (d) 32 hours

32. Vinod types 540 letters in half an hour, then how many letters will be typed in 6 minutes? **(RMS 2022)**

(a) 108 (b) 240

(c) 270 (d) 90

33. How many persons will be able to live for 50 days on food which is sufficient for 400 persons for 10 days? **(RMS 2018)**

(a) 80 (b) 8

(c) 40 (d) 200

34. **10 persons can finish a piece of work in 15 days. In how many days the same work can be done by 25 persons?** **(JNV 2017)**

(a) 12 days (b) 20 days
(c) 6 days (d) 36 days

35. **12 men or 15 women can finish a work in 24 days. In how many days the same work can be finished by 8 men and 8 women?** **(JNV 2018)**

(a) 16 days (b) 20 days
(c) 24 days (d) 28 days

36. **Dev completed the school project in 20 days. How many days will Ashu take to completed the same work if he is 25% more efficient then Dev?**

(a) 10 days (b) 12 days
(c) 16 days (d) 15 days

37. **A & B together can dive a trench in 12 days, which a can dive in 30 days. In how long B alone can burrow it**

(a) 18 days (b) 20 days
(c) 19 days (d) 21 days

38. **Two Painters 'P' & 'Q' paint the room in 3 days if P alone paint the room in 12 days, in how many days can 'Q' alone complete the same work?**

(a) 4 days (b) 6 days
(c) 9 days (d) 12 days

39. **4 men can repair a road in 7 hours. How many men are required to repair the road in 2 hours?**

(a) 17 men
(b) 14 men
(c) 13 men
(d) 16 men

ANSWER-KEY													
1.	(C)	**2.**	(B)	**3.**	(B)	**4.**	(C)	**5.**	(A)	**6.**	(D)	**7.**	(A)
8.	(A)	**9.**	(A)	**10.**	(A)	**11.**	(A)	**12.**	(B)	**13.**	(C)	**14.**	(D)
15.	(C)	**16.**	(B)	**17.**	(D)	**18.**	(C)	**19.**	(A)	**20.**	(B)	**21.**	(D)
22.	(D)	**23.**	(D)	**24.**	(A)	**25.**	(A)	**26.**	(A)	**27.**	(B)	**28.**	(C)
29.	(A)	**30.**	(C)	**31.**	(B)	**32.**	(A)	**33.**	(A)	**34.**	(C)	**35.**	(B)
36.	(C)	**37.**	(B)	**38.**	(A)	**39.**	(B)						

PERIMETER AND AREA

1. Find the perimeter of square of side 13 cm?
(a) 50 cm (b) 54 cm
(c) 52 cm (d) None of these

2. What is the area of a square of side 4.5 cm?
(a) 2025 cm^2 (b) 2.025 cm^2
(c) 202.5 cm^2 (d) 20.25 cm^2

3. What is the area of a square whose diagonal is 14 cm?
(a) 98 cm^2 (b) 96 cm^2
(c) 94 cm^2 (d) 49 cm^2

4. Find the area of square whose perimeter is 34 cm?
(a) 20.24 cm^2 (b) 7.225 cm^2
(c) 7225 cm^2 (d) 72.25 cm^2

5. Find the length of the diagonal of a square whose each side is 15 cm.
(a) 15 cm (b) $15\sqrt{2}$ cm
(c) $15\sqrt{3}$ cm (d) $2\sqrt{15}$ cm

6. What is the perimeter of a square side 24.26 cm?
(a) 93.24 cm (b) 97.04 cm
(c) 94.54 cm (d) 96.84 cm

7. Find the length of each side of square if its area is 576 cm^2
(a) 18 cm (b) 24 cm
(c) 26 cm (d) 28 cm

8. The length of each side of a square is 26 cm.Find the length of its diagonal?
(a) $26\sqrt{3}$ cm (b) $26\sqrt{3}$ cm
(c) 26 cm (d) $26\sqrt{2}$ cm

9. If length of the diagonal of a square is $26\sqrt{2}$ cm.Find the area of the square?
(a) 676 cm^2 (b) 576 cm^2
(c) 525 cm^2 (d) none of these

10. Rohan runs along the side of a square garden which is 115 metres long each. If he covers 40 cm in one step, how many steps will he take to run once around the garden?
(a) 1150 cm (b) 1140 cm
(c) 1120 cm (d) 1000 cm

11. Muskan runs eight times around a square field each of whose side measures 68 metres. How much distance does she run?
(a) 2.124 km (b) 2.176 km
(c) 2.224 km (d) 2.264 km

12. The perimeter and the area of a square are numerically equal. The length of the side of the square is?
(a) 3 units (b) 5 units
(c) 2 units (d) 4 units

13. The number of square on a game board whose each side measures 12 cm, if the side of each square is 2 cm, is
(a) 24 (b) 32 (c) 36 (d) 64

14. A wall of a hall is square shaped with each side measuring 16 metres. Find the cost of making a design on it at the rate of ₹ 7.5 per square metre?
(a) ₹ 1840 (b) ₹ 1875
(c) ₹ 1920 (d) ₹ 1890

15. Find the length of the side of a square whose area is sixteen times the area of a square of side 24 cm.

(a) 48 cm (b) 64 cm
(c) 96 cm (d) 72 cm

16. The side of a square room is 12m. Find the cost of carpeting the room at the rate of ₹ 5 per square metre?

(a) ₹ 640 (b) ₹ 680
(c) ₹ 720 (d) ₹ 760

17. The side of a square is 8m. The same square is divided into four equal squares. Find the area of each small square?

(a) 4 m^2 (b) 16 m^2
(c) 36 m^2 (d) 64 m^2

18. Find the perimeter of a rectangle having length 8 cm and breadth 3.5 cm?

(a) 18 cm (b) 24 cm
(c) 26 cm (d) 23 cm

19. What is the area of a rectangle of length 6.5 cm and breadth 6 cm?

(a) 38 cm^2
(b) 39 cm^2
(c) 40 cm^2
(d) None of these

20. The area of a rectangular park is 952 m^2. If the breadth of the park is 14 metre, find the length of the park?

(a) 68 m (b) 58 m
(c) 63 m (d) 68 cm

21. Find the length of the diagonal of a rectangle whose length and breadth are 15 cm and 8 cm respectively.

(a) 18 cm (b) 27 cm
(c) 17 cm (d) 28 cm

22. The area of a rectangle is 252 cm^2. If the length of the rectangle is 18 cm, then find its perimeter?

(a) 54 cm (b) 58 cm
(c) 72 cm (d) 64 cm

23. The perimeter of a rectangle Is 220 cm. Find the area of the rectangle if its length is 75 cm.

(a) 2425 cm (b) 2524 cm
(c) 2575 cm (d) 2625 cm

24. The perimeter of a rectangle is 140 cm. If its length is three times its breadth, then find the area of rectangle?

(a) 918.75 cm^2 (b) 918.25 cm^2
(c) 718.75 cm^2 (d) none of these

25. A wall is built around a rectangular plot of length 72m and breadth 40 m.
Find the cost of constructing the wall at ₹ 160 per metre.

(a) ₹ 32240 (b) ₹ 34860
(c) ₹ 35840 (d) ₹ 36120

26. How much will it cost to fence a garden 32 m long and 19m wide at the rate of ₹ 25 per metre?

(a) 2480 (b) 2510
(c) 2550 (d) 2580

27. How many blocks, each 20 cm long and 15 cm wide, will be required to lay a path 12m long and 8m wide?

(a) 3000 (b) 3200
(c) 3600 (d) 4000

28. The cost of fencing a rectangular field at ₹ 60 per metre is ₹ 4200. If the length of the field is 23m. Then its breadth is ?

(a) 8 m (b) 10 m
(c) 16 m (d) 12 m

29. Bob wants to cover the floor of a room 4 m long and 3 m wide by square tiles. If each square tile has side 0.5 m, then find the number of tiles required to cover the floor of the room.
(Sainik School 2017)
(a) 36 (b) 42
(c) 48 (d) 54

30. Find the radius of a circle whose circumference is 79.2 cm $\left(\text{Given that } \pi = \frac{22}{7}\right)$
(Sainik School 2016)
(a) 12.6 cm (b) 11.4 cm
(c) 12.8 cm (d) 11.2 cm

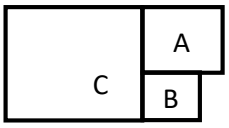
31. John plans to tile his kitchen floor with square tiles. Each side of the tile is 10 cm. His kitchen is 2.2 m long and 1.8 m wide. How many tiles will John need.
(Sainik School 2016)
(a) 376 (b) 384
(c) 392 (d) 396

32. If the circumference of a circular park is 88 m, then find the area of the park.
(Sainik School 2015)
(a) 548 m^2 (b) 584 m^2
(c) 616 m^2 (d) 632 m^2

33. A rectangle and a square have the same perimeter 100 m. If the rectangle has a breadth 2 m less than that of the square. Find the area of the rectangle.
(Sainik School 2015)
(a) 616 m^2 (b) 621 m^2
(c) 627 m^2 (d) 632 m^2

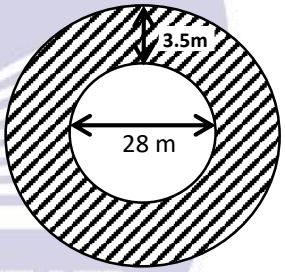
34. A carpet is 6.60 m long and 3.75 m broad. The carpet is surrounded by a lace. Find the length of the lace.
(Sainik School 2015)
(a) 20.7 m (b) 19.3 m
(c) 21.6 m (d) 20.1 m

35. The area of square A is 25 cm^2. The perimeter of square B is 12 cm. What is the area of square C?
(Sainik School 2014)



(a) 36 cm^2 (b) 49 cm^2
(c) 64 cm^2 (d) 81 cm^2

36. Find the amount required to make a circular path around garden as shown in the figure (shaded portion), if the rate is ₹ 20 per square metre.
(Sainik School 2014)



(a) ₹ 6640 (b) ₹ 6780
(c) ₹ 6930 (d) ₹ 6860

37. The radius of a wheel is 35 cm. How much distance will it travel in 100 revolutions? (Sainik School 2014)
(a) 220 m (b) 240 m
(c) 260 m (d) 280 m

38. The side of a square is 8 m. The same square is divided into four equal squares. Find the area of each small square. (Sainik School 2014)
(a) 4 m^2 (b) 16 m^2
(c) 36 m^2 (d) 64 m^2

39. How many stones of 0.50 m^2 can be fixed in a courtyard of length 15 m and width 10 m.

(Sainik School 2012)

(a) 200
(b) 250
(c) 300
(d) 400

40. A rectangular lawn is 40 m by 30 m. It has two roads of 2 m width running in the middle, one parallel to the length and the other parallel to the breadth. Find the area of the roads.

(Sainik School 2011)

(a) 124 m^2 (b) 136 m^2
(c) 140 m^2 (d) 144 m^2

ANSWER-KEY															
1.	(C)	**2.**	(D)	**3.**	(A)	**4.**	(D)	**5.**	(B)	**6.**	(B)	**7.**	(B)	**8.**	(D)
9.	(A)	**10.**	(A)	**11.**	(B)	**12.**	(D)	**13.**	(C)	**14.**	(C)	**15.**	(C)	**16.**	(C)
17.	(B)	**18.**	(D)	**19.**	(B)	**20.**	(D)	**21.**	(C)	**22.**	(D)	**23.**	(D)	**24.**	(A)
25.	(C)	**26.**	(C)	**27.**	(B)	**28.**	(D)	**29.**	(C)	**30.**	(A)	**31.**	(D)	**32.**	(C)
33.	(B)	**34.**	(A)	**35.**	(C)	**36.**	(C)	**37.**	(A)	**38.**	(B)	**39.**	(C)	**40.**	(B)

1. **What is the total surface area of a cuboid whose length, breadth, height are 6 cm, 4 cm and 3 cm respectively ?**

(a) 102 cm^2 (b) 110 cm^2
(c) 106 cm^2 (d) 108 cm^2

2. **Find the lateral surface area of a cuboid whose dimensions are 5 cm, 4 cm and 2 cm respectively.**

(a) 30 cm^2 (b) 35 cm^2
(c) 48 cm^2 (d) 36 cm^2

3. **Find the air contained in a hall of length 12 cm, breadth 10 cm, height 8 cm.**

(a) 900 cm^2 (b) 920 cm^2
(c) 940 cm^2 (d) 960 cm^3

4. **A room of has dimensions 3 cm × 4 cm × 5 cm. Find the length of maximum rod that can be placed in room.**

(a) $\sqrt{40}$ cm (b) $\sqrt{25}$ cm
(c) $\sqrt{50}$ cm (d) $\sqrt{30}$ cm

5. **Find the total surface area of a cubical room of side 7 m**

(a) 343 (b) 294 (c) 296 (d) 398

6. **The walls of a cubical hall of side 13 m is to be painted. Find the area to be painted.**

(a) 674 m^2 (b) 655 m^2
(c) 676 m^2 (d) 648 m^2

7. **Find the volume of fish tank whose each side measures 15 cm.**

(a) 3375 cm^3 (b) 3660 cm^3
(c) 3370 cm^3 (d) 3580 cm^3

8. **Find the length of maximum rod that can be placed in a cubical room of 10 cm**

(a) $10\sqrt{3}$ m (b) $15\sqrt{4}$ m
(c) $11\sqrt{3}$ m (d) $10\sqrt{6}$ m

9. **Find the volume of a cube of side 6cm.** **[AISSEE 2020]**

(a) 216 (b) 36 (c) 72 (d) 108

10. **What will be the depth of a cubical pond whose volume is 729 m^3** **[AISSEE 2019]**

(a) 9 (b) 6 (c) 8 (d) 5

11. **Find the number of cubical boxes of side 3 cm each which can be cut from a box 15 cm × 9 cm × 12 cm** **[AISSEE 2017]**

(a) 50 (b) 60 (c) 70 (d) 80

12. **A brick measure 20 cm by 10 cm by $7\frac{1}{2}$ cm. How many bricks will be required for a wall 25 m long 2 m hight and $\frac{3}{4}$m thick ?** **[AISSEE 2015]**

(a) 20000 (b) 25000
(c) 30000 (d) 40000

13. **A block of wood is in the form of a cube. Its edge is 4 m. How many rectangular pieces of size 20 cm × 10 cm × 5 cm can be at from the block, if there is no wastage of wood ?** **[AISSEE 2014]**

(a) 56000 (b) 60000
(c) 64000 (d) 68000

14. A pond is 5 m long, 4 m wide and 2.5m deep. How much water does it contains? **[AISSEE 2012]**

(a) 40 (b) 50 (c) 60 (d) 75

15. A pit 50 m long 40 m wide and 1 m deep is dug. Find the volume of the earth dug out from the pit **[AISSEE 2011]**

(a) 1000 m^3 (b) 1500 m^3

(c) 2000 m^3 (d) 2500 m^3

16. Find the volume of a Geometry Box whose length is 11.05 cm, breadth is 5.05 cm and height is 1.03 cm **[AISSEE 2010]**

(a) 54.38 (b) 57.48

(c) 62.24 (d) 64.76

17. Find the surface area of a cube side 6 cm. **[AISSEE 2009]**

(a) 144 (b) 182

(c) 216 (d) 256

18. Find the volume of a brick whose length is 22.5 cm, breadth is 10.5 cm and height is 9 cm. **[AISSEE 2008]**

(a) 2126.25 (b) 2238.75

(c) 2366.25 (d) 2408.75

19. A tank is 5 m long, 4 m wide and 3 m high. How much water can it hold **[AISSEE 2005]**

(a) 40 m^3 (b) 50 m^3 (c) 60 m^3 (d) 70 m^3

20. A big cube has each portion of 44 cm. Tiny cubes of 4 cm portion each are cut from that. Then how many tiny cubes will be formed that are surrounded by cubes on all sides ? **[AISSEE 2021]**

(a) 888 (b) 729

(c) 164 (d) 33

21. A river 2m deep and 45 m wide is flowing at the rate of 3 km/hr. Find the quantity of water that flows into the sea per minute.

(a) 3000 m^3 (b) 4500 m^3

(c) 7000 m^3 (d) 3500 m^3

22. What will happen to the volume of cube, if its edge is doubled

(a) It will become eight times

(b) No change

(c) It will become seven times

(d) It will become four times

23. What will happen to the volume of a cuboid if its length is doubled, breadth is same and height is doubled ?

(a) It will becomes 4 times

(b) It will becomes 9 times

(c) It will becomes 3 times

(d) It will becomes 5 times

24. Find the weight of a solid rectangular iron piece of size 40 cm × 30 cm × 20 cm, if 1 cm^3 of iron weight is 13 gm

(a) 306 kg (b) 312 kg

(c) 324 kg (d) 336 kg

25. Find the number of cuboidal boxes of dimensions 4 cm × 3 cm × 12 cm which can be stored, in a cartoon of dimensions 40 cm × 72 cm × 48 cm

(a) 920 (b) 940 (c) 960 (d) 980

26. Four cubes of edge 4 cm each are joined end to end. Find the volume of resulting solid.

(a) 64 cm^3

(b) 128 cm^3

(c) 192 cm^3

(d) 256 cm^3

27. **Three cubes of edge 3 cm each are joined end to end. Find the T.S.A of resulting solid.**

(a) 126 (b) 200 (c) 256 (d) 324

28. **Find the height of a cuboid of volume 200 cm^3, whose length and breadth are 5 cm and 8 cm respectively.**

(a) 2 cm (b) 4 cm
(c) 5 cm (d) 8 cm

29. **A cuboidal vessel is 15 cm long and 5 cm high what should be its breadth so that it can hold 450 cm^3 of a liquid.**

(a) 3 cm (b) 4 cm
(c) 5 cm (d) 6cm

30. **A cuboidal wooden block contains 48 cm^3 wood , if it is 4 cm long and 3 cm wide, then find its height.**

(a) 2 cm (b) 2.5 cm
(c) 4 cm (d) 3 cm

31. **A village having a population of 4000, required 150 litres of water per head per day it has a tank which is 20 m long, 15 m board and 6 m high. In how many days will the water of this tank left ?**

(a) 2 days (b) 3 days
(c) 4 days (d) 5 days

32. **Three cubes whose each edge is 4 cm are joined together to form a cuboid. Find the volume of the new cuboid formed** **[AISSEE 2023]**

(a) 64 cm^3 (b) 0.064 cm^3
(c) 192 cm^3 (d) 12 cm^3

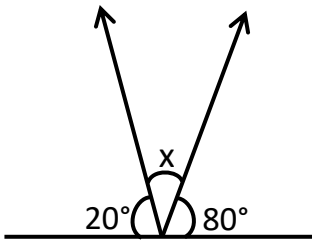
33. **The area of a triangle whose base is 12 cm and height twice the base is** **[AISSEE 2022]**

(a) 288 cm^2 (b) 144 cm^2
(c) 289 cm^2 (d) 298 cm^2

ANSWER-KEY													
1.	(D)	**2.**	(D)	**3.**	(D)	**4.**	(C)	**5.**	(B)	**6.**	(C)	**7.**	(A)
8.	(A)	**9.**	(A)	**10.**	(A)	**11.**	(B)	**12.**	(B)	**13.**	(C)	**14.**	(B)
15.	(C)	**16.**	(B)	**17.**	(C)	**18.**	(A)	**19.**	(C)	**20.**	(B)	**21.**	(B)
22.	(A)	**23.**	(A)	**24.**	(B)	**25.**	(C)	**26.**	(D)	**27.**	(A)	**28.**	(C)
29.	(D)	**30.**	(C)	**31.**	(B)	**32.**	(C)	**33.**	(B)				

PRACTICE QUESTION

1. Find x from following figure.

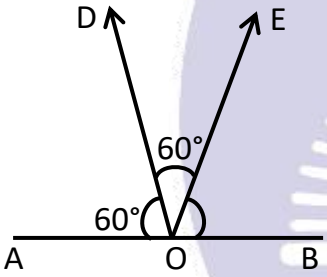


(a) 100° (b) 80° (c) 60° (d) 180°

2. Complementary angles of an angle is five times of it ?

(a) 45° (b) 15° (c) 35° (d) 22°

3. From the figure, find ∠BOE

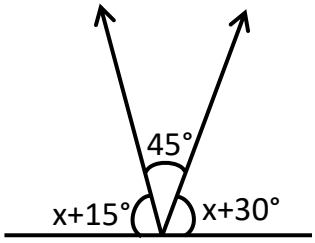


(a) 60° (b) 45° (c) 20° (d) 30°

4. Difference between two complementary angles is 10°. Calculate the value of both angles.

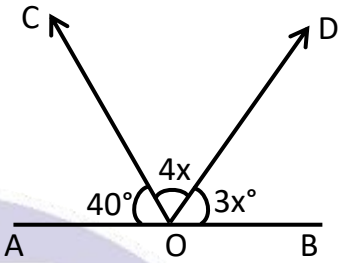
(a) 45°, 45° (b) 40°, 50°
(c) 50°, 60° (d) 100°, 10°

5. Find the value of x



(a) 45° (b) 60° (c) 30° (d) 90°

6. If ∠AOC = 40°, ∠COD = 4x° ad ∠ BOD = 3x° then ∠COD is equal to



(a) 80° (b) 100°
(c) 120° (d) 140°

7. How many acute angles are there inside the given figure ?

[SAINIK 2022]

(a) 4 (b) 6 (c) 5 (d) 7

8. Write the name of the angle formed when the clock time is 7 : 15 Pm

[SAINIK 2021]

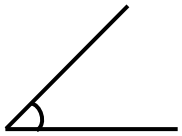
(a) Acute angle
(b) Right angle
(c) obtuse angle
(d) strait angle

9. The measure of an angle is $\frac{3}{4}$ of 60°. What is the measure of its complementary angle ?

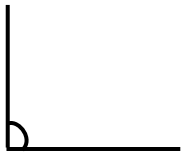
(a) 30° (b) 60°
(c) 45° (d) 20°

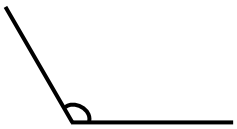
10. Which sequence correctly matches these angles with their measure.

[SAINIK 2020]

I. 

II. 

III. 

IV. 

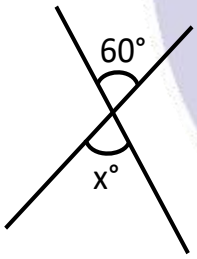
(a) (I), (III), (IV), (II)
(b) (I), (II), (III), (IV)
(c) (IV), (III), (II), (I)
(d) (I), (IV), (III), (II)

11. Which of the following pair of angles are supplementary angles ?

[SAINIK 2018]

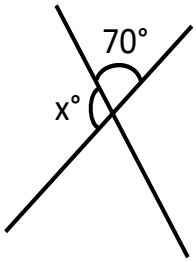
(a) 46° and 44° (b) 113° and 67°
(c) 245° and 115° (d) 90° and 180°

12. What is the value of x°



(a) 120° (b) 60°
(c) 70° (d) None of these

13. What is the value of x°



(a) 70° (b) 110°
(c) 130° (d) None of these

14. The measure of an angle is three times the measure of its supplement. The angles are :-

(a) 20°, 60° (b) 30°, 60°
(c) 45°, 135° (d) 225°, 675

15. A pair of angles with a common vertex and common arm are called

(a) adjacent angle
(b) complementary mg
(c) supplementary
(d) None

16. Find the measure of the supplementary angle of 132°

(a) 48° (b) 32°
(c) 42° (d) 38°

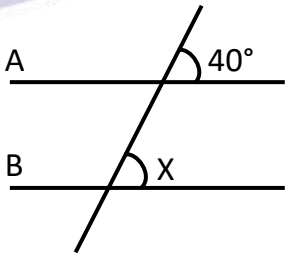
17. The supplement of an acute angle is a/an _____ angle ?

(a) Acute (b) obtuse
(c) Right (d) Straight

18. An angle measuring 180° is called

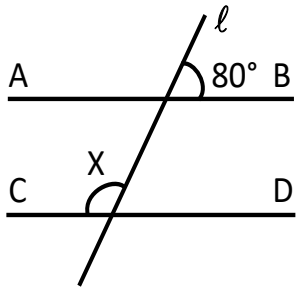
(a) a complet angle
(b) a reflex angle
(c) a straight angle
(d) None of these

19. A||B and ℓ is transval of AB. then find value of x



(a) 40°
(b) 120°
(c) 140°
(d) None of these

20. If AB || CD and ℓ is transversal line an AB and CD than find the value of x°



(a) 100° (b) 120°
(c) 180° (d) 80°

21. Which of the following has only one end point ?

(a) line segment (b) ray
(c) line (d) plane

22. A flat surface which extends infinitely in all directions is called a:

(a) plane (b) line
(c) line segment (d) point

23. How many lines can be drawn through two points?

(a) 1 (b) 2
(c) 3 (d) not possible

24. Which of the following statements is incorrect ?

(a) A line does not have a definite length
(b) A line has no end points
(c) A line cannot be drawn on a paper but it can be represented by a diagram
(d) A line can be produced only in one direction.

25. Which of the following is not an obtuse angle?

(a) 115° (b) 195° (c) 165° (d) 175°

26. The angle whose measure is 90° is called a/an:

(a) acute angle (b) right angle
(c) obtuse angle (d) straight angle

27. An angle whose measure is 50° is a/an:

(a) right angle (b) reflex angle
(c) acute angle (d) obtuse angle

28. 1 right angle is equal to:

(a) 45° (b) 90°
(c) 180° (d) 360°

29. Which of the following is true?

(a) Right Angle > Acute Angle
(b) Acute Angle > Right Angle
(c) Right Angle = Acute Angle
(d) Acute Angle > Obtuse Angle

30. How many right angles are there in Engle letter 'H' ?

(a) 2 (b) 1
(c) 4 (d) None of these

31. Find the angle measure between the hands of a clock when time shows 6 p.m.

(a) 90° (b) 45° (c) 180° (d) 270°

32. Write the name of the angle formed when the clock time is 7:15 p.m.

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

33. At which one of the following time is the angle between the hands of a clock exactly one straight angle ?

(a) 12 a.m. (b) 12 p.m.
(c) 9 : 16 a.m. (d) 6 a.m.

34. What is the complementary angle of 60°?

(a) 30° (b) 120° (c) 300° (d) 90°

35. Find the supplementary angle of 50°?

(a) 40° (b) 50° (c) 130° (d) 140°

36. The supplementary angle of 75° is:

(a) 80° (b) 15° (c) 105° (d) 180°

37. Find the supplementary angle of 55°.

(a) 135° (b) 45° (c) 125° (d) 115°

38. What is the complementary angle of 40°?

(a) 140° (b) 80° (c) 90° (d) 50°

39. Which of the following pairs of angles is supplementary?

(a) 46° and 44° (b) 113° and 67°

(c) 245° and 115° (d) 90° and 180°

40. If an angle is its own complementary angle, then its measure is:

(a) 30° (b) 45° (c) 60° (d) 90°

41. The angle whose degree measure is twice its supplementary angle is:

(a) 60° (b) 120°

(c) 30° (d) 45°

42. The difference between two complementary angles is 10°. Calculate the values of both the angles.

(a) 55°, 45° (b) 40°, 50°

(c) 50°, 60° (d) 100°, 90°

43. The measure of an angle is twice its complementary angle. The angle is:

(a) 30° (b) 45° (c) 15° (d) 60°

44. Two supplementary angles differ by 20°. The measure of smaller angle will be:

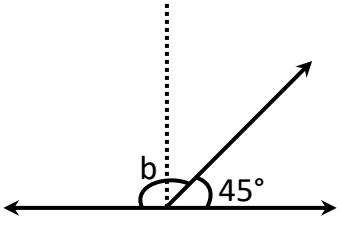
(a) 60° (b) 80°

(c) 100° (d) 120°

45. The ratio of two acute angles which together form a right angle is 4 : 5. Find the difference between these angles.

(a) 10° (b) 40° (c) 50° (d) 20°

46. What is the measure of angle 'b' given in the figure?



(a) 115° (b) 125° (c) 135° (d) 145°

47. The complement of one-fourth of a straight angle will be:

(A) Acute angle

(B) Right angle

(C) Obtuse angle

(D) Half of a right angle

(a) Only (B)

(b) Only (C)

(c) Both (A) and (B)

(d) Both (A) and (D)

48. An angle is three times of the half of a right angle. Find its supplement.

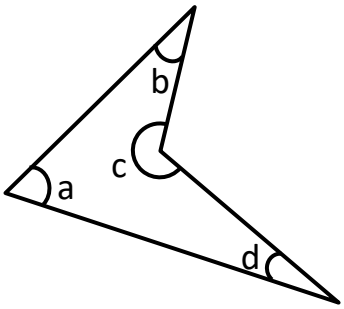
(a) 90° (b) 135° (c) 145° (d) 45°

49. Name the type of an angle whose measure is 29° more than the difference of 136° and 77°.

(a) acute angle (b) obtuse angle

(c) right angle (d) reflex angle

50. Which of the angles in the given figure is larger than two (2) right angles?



(a) Only ∠a

(b) Both ∠a and ∠d

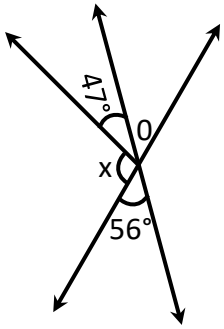
(c) Only ∠c

(d) ∠a, ∠b and ∠d only

51. Find the supplement of complement of two thirds of a right angle.

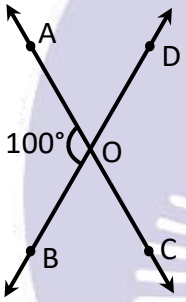
(a) 120° (b) 150° (c) 30° (d) 60°

52. In the figure given, the measure of x is_____.



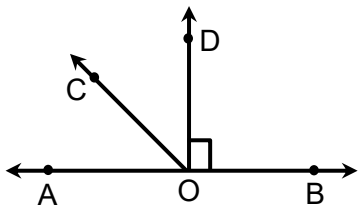
(a) 124° (b) 43° (c) 77° (d) 56°

53. Find the measure of ∠BOC in the given figure.



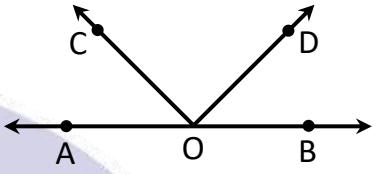
(a) 100° (b) 60° (c) 80° (d) 120°

54. In the given figure, ∠AOC = x, ∠COD = 2x and ∠BOD = 3x. Find ∠BOD.



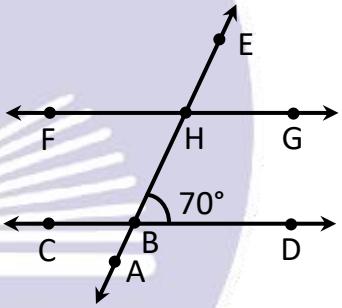
(a) 90° (b) 100° (c) 110° (d) 120°

55. In the given figure, AOB is a straight line. If ∠AOC + ∠BOD = 85° , then find the measure of ∠COD.



(a) 85° (b) 75° (c) 95° (d) 105°

56. Find the measure of ∠ABC in the following figure:



(a) 110° (b) 70° (c) 20° (d) 60°

ANSWER-KEY												
1.	(B)	**2.**	(B)	**3.**	(A)	**4.**	(B)	**5.**	(A)	**6.**	(A)	**7.**	(B)
8.	(C)	**9.**	(C)	**10.**	(A)	**11.**	(B)	**12.**	(B)	**13.**	(B)	**14.**	(C)
15.	(A)	**16.**	(A)	**17.**	(B)	**18.**	(C)	**19.**	(A)	**20.**	(A)	**21.**	(B)
22.	(A)	**23.**	(A)	**24.**	(D)	**25.**	(D)	**26.**	(B)	**27.**	(C)	**28.**	(B)
29.	(A)	**30.**	(C)	**31.**	(C)	**32.**	(C)	**33.**	(D)	**34.**	(A)	**35.**	(C)
36.	(C)	**37.**	(C)	**38.**	(D)	**39.**	(B)	**40.**	(B)	**41.**	(B)	**42.**	(B)
43.	(D)	**44.**	(B)	**45.**	(A)	**46.**	(C)	**47.**	(D)	**48.**	(B)	**49.**	(A)
50.	(C)	**51.**	(B)	**52.**	(C)	**53.**	(C)	**54.**	(A)	**55.**	(C)	**56.**	(B)

1. **Find the number of diagonals in a 17 sided polygon.**
(a) 119 (b) 117 (c) 114 (d) 116

2. **Find the number of diagonals in a pentagon**
(a) 3 (b) 4 (c) 5 (d) 6

3. **Find the number of diagonals in a octagon**
(a) 14 (b) 16 (c) 18 (d) 20

4. **The number of diagonals in 15 sides polygon**
(a) 80 (b) 84 (c) 86 (d) 90

5. **Find the sum of all interior angles of a 13 sides polygon**
(a) 1985 (b) 1980 (c) 1970 (d) 1976

6. **Find the sum of all interior angles of a quadrilateral.**
(a) 360° (b) 480° (c) 540° (d) 580°

7. **Find the sum of a nine sided polygon**
(a) 1080° (b) 1120° (c) 1180°(d) 1260°

8. **Find the sum of a twelve sided polygon**
(a) 1200° (b) 1500° (c) 1600° (d) 1800°

9. **Find the sum of all the exterior angles of a hexagon.**
(a) 180° (b) 360° (c) 120° (d) 160°

10. **Find the sum of all the exterior angles of a ten – sided polygon ?**
(a) 1440° (b) 1260° (c) 360° (d) 1420°

11. **Find the sum of all the exterior angles of a polygon having 25 sided.**
(a) 108° (b) 112° (c) 116° (d) 360°

12. **Find the measure of each interior angle of a regular polygon which has is sides**
(a) 120° (b) 160° (c) 180° (d) 360°

13. **The measure of each of the interior angle of a regular pentagon**
(a) 108° (b) 112° (c) 116° (d) 124°

14. **What is the measure of each of the interior angle of a 8 sided regular polygon**
(a) 135° (b) 145° (c) 140° (d) 150°

15. **What is the measure of each of the interior angle of a 20 sided regular polygon**
(a) 148° (b) 154° (c) 162° (d) 172°

16. **What is the measure of each of the exterior angles of a regular polygon having 24 sides.**
(a) 18° (b) 15° (c) 25° (d) 30°

17. **The measure of an exterior angle of regular nine-sided polygon**
(a) 30° (b) 35° (c) 40° (d) 45°

18. **What is the measure of an exterior angle of a 15 – sided regular polygon**
(a) 24° (b) 28° (c) 18° (d) 32°

19. **If the measure of an exterior angle is 64°, then find the measure of its corresponding interior angle.**
(a) 116° (b) 120° (c) 118° (d) 125°

20. **The measure of an interior angle of a polygon is 132°. What is its corresponding exterior angle.**
(a) 45° (b) 48° (c) 55° (d) 60°

21. **The measure of each interior angle of a regular polygon is 135° then find its exterior angle**

(a) 35° (b) 45° (c) 55° (d) 65°

22. **The measure of each exterior angle is 60° then find the interior angle**

(a) 110° (b) 120°
(c) 130° (d) 140°

23. **Which of the following can't be measure of interior angle of a regular polygon.**

(a) 162° (b) 165°
(c) 198° (d) 165.6°

24. **The measure of each interior angle of a regular polygon is 120°. Find the number of sides of the polygon.**

(a) 6 (b) 8 (c) 12 (d) 15

25. **If the measure of each interior angle of a regular polygon is 135° then find the number of sides of a polygon.**

(a) 7 (b) 8 (c) 9 (d) 10

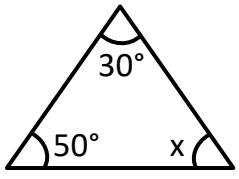
26. **If the measure of each exterior angle of a regular polygon is 30° , then find the number of sides of the polygon.**

(a) 10 (b) 11 (c) 12 (d) 13

27. **If any of two angles of a triangle are 35° and 75° then find its third angle.**

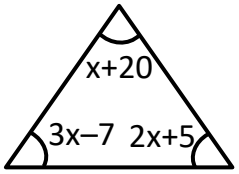
(a) 35° (b) 75°
(c) 110° (d) 70°

28. **Find the value of x**



(a) 90 (b) 60 (c) 70 (d) 100

29. **Find the value of x**



(a) 27 (b) 32 (c) 37 (d) 426

30. **In Δ ABC if ∠A = 72° and ∠B = 63° find ∠C**

(a) 35° (b) 40° (c) 45° (d) 50°

31. **The angles of a triangle are in the ratio 3 : 2 : 7. What is the measure of the greatest angle.**

(a) 45° (b) 30° (c) 105° (d) 180°

32. **If the angles of a triangle are in the ratio 4 : 3 : 2 then find smallest angle.**

(a) 60° (b) 70° (c) 40° (d) 80°

33. **The angles of a triangle are 55°, 95°, 30°. What type of triangle is this ?**

(a) acute (b) obtuse
(c) right (d) None

34. **The angles of a triangle are 65°, 45°, 70. What type of triangle is these?**

(a) acute (b) obtuse
(c) right (d) None

35. **The angles of a triangle are 60°, 30°, 90°. What type of triangle is this ?**

(a) acute (b) obtuse
(c) right (d) None

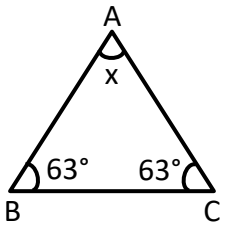
36. **The angles of a triangle are 45°, 45°, 90°. What type of triangle is this**

(a) isosceles (b) right
(c) both (d) None

37. **Ratio of angles of a triangle 3 : 5 : 7, then find the difference between the greatest and the smallest angle.**

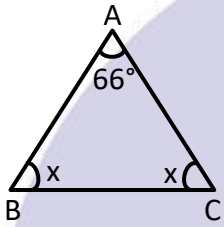
(a) 36° (b) 42° (c) 48° (d) 54°

38. If each of the equal angles of an isosceles triangle is 63° then find its third angle.



(a) 54° (b) 45° (c) 55° (d) 60°

39. If third angles of an isosceles triangle is 66° then find the value of equal angles.



(a) 58° (b) 60° (c) 57° (d) 66°

40. One of the angles of a triangle is 70° and other two angles are equal. Find each of these angles.

(a) 50° (b) 55° (c) 60° (d) 65°

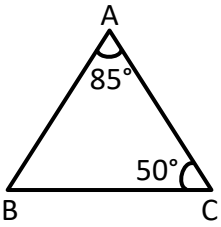
41. Name the type of ΔPQR in which ∠P = 50°, ∠Q = 60° and ∠R = 70°

(a) acute (b) obtuse
(c) right (d) isosceles

42. The angles of a triangle are in the ratio 1 : 2 : 3. Find the greatest angle.

(a) 80° (b) 60° (c) 120° (d) 90 °

43. Find the measure of ∠ABC in the following figure.



(a) 25° (b) 45° (c) 35° (d) 55°

44. Each of two equal angles of an isosceles triangle is twice the third angle. Find the each of the equal angle.

(a) 36° (b) 72° (c) 54° (d) 48°

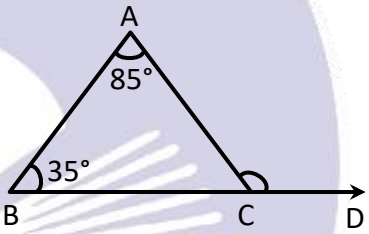
45. One of the acute angle of a right triangle is 36° then find the other acute angle.

(a) 44° (b) 46° (c) 48° (d) 54°

46. The acute angles of a right triangles are in the ratio 2 : 3. Find the largest angle.

(a) 50° (b) 40° (c) 60° (d) 54°

47. In the given figure find the measure of ∠ACD

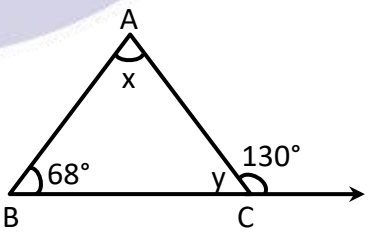


(a) 110° (b) 115° (c) 120° (d) 130°

48. Each angle of an equilateral triangle measures.

(a) 45° (b) 60° (c) 50° (d) 70°

49. Find the difference between x & y



(a) 8° (b) 12° (c) 16° (d) 18°

50. Exterior angle of a triangle measures 110° and its interior opposite angles are in the ratio 2 : 3. Find the greatest interior opposite angle.

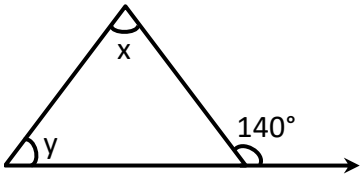
(a) 44° (b) 56° (c) 66° (d) 72°

51. Which of the following can not be sides of a triangle.

(a) 3, 4, 6 (b) 4, 6, 8

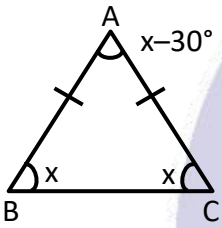
(c) 2, 5, 9 (d) 7, 9, 11

52. In the given figures x : y = 3 : 4 find the value of y.



(a) 60° (b) 70° (c) 50° (d) 80°

53. In Δ ABC, AB = AC, ∠A = x – 30° , ∠A = x – 30° , ∠B = x find the value of x.



(a) 60° (b) 65° (c) 70° (d) 75°

54. One of the exterior angle of a triangle is 135° and one of its opposite interior angle is 77° then find the other interior opposite angle.

(a) 68° (b) 48° (c) 98° (d) 58°

55. In Δ ABC, AB = AC and ∠B = 40° find the measure of ∠A.

(a) 40° (b) 90° (c) 100° (d) 110°

56. One of the two equal angles of an isosceles triangle measures 55°. Find the measure of the third angle.

(a) 60° (b) 65° (c) 70° (d) 80°

57. Name the type of triangle Δ ABC, AB = 8.7 cm AC = 7 cm, BC = 6 cm

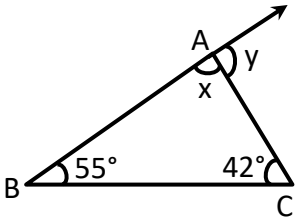
(a) Right triangle

(b) Acute triangle

(c) Scalene triangle

(d) isosceles triangle

58. Find the difference between x & y



(a) 10° (b) 12° (c) 14° (d) 16°

59. The longest chord of a circle is called.

(a) arc (b) radius

(c) diameter (d) segment

60. The maximum number of a chords of a circle can have it

(a) 1 (b) 2

(c) 3 (d) infinitely many

61. The part of the boundary of a circle is called.

(a) chord (b) arc

(c) diameter (d) sector

62. The part of a circle bounded between a chord and its corresponding arc is called

(a) diameter (b) sector

(c) segment (d) semi-circle

63. A line which intersect a circle at two different points is called a

(a) chord (b) tangent

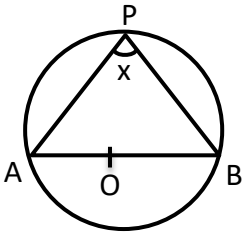
(c) secant (d) diameter

64. A line which touches a circle at one point is called a

(a) intersecting line (b) chord

(c) secant (d) tangent

65. Find the value of x in the following figure, if AOB is a diameter of a circle.



(a) 80° (b) 90° (c) 100° (d) CND

66. **If four angle of a quadrilateral 105°, 75°, x°, and 115°. Then find the value of x.**
(a) 65° (b) 35° (c) 75° (d) 50°

67. **The angles of a quadrilateral are 110°, 72°, 55° and x° find the value of x.**
(a) 113° (b) 117° (c) 123° (d) 127°

68. **The three angles of a quadrilateral are equal to 110°, 50°, 40° respectively. Find its fourth angle.**
(a) 140° (b) 150° (c) 160° (d) 170°

69. **A quadrilateral has three acute angles each measuring 70° what is the measure of fourth angle ?**
(a) 150° (b) 140° (c) 160° (d) 130°

70. **Two angles of a quadrilateral are of measure 55° each and the other two angles are equal. What is the measure of each of these two angles ?**
(a) 115° (b) 125° (c) 135° (d) 120°

71. **The four angles of a quadrilateral are in the ratio 3 : 5 : 7 : 9. Find the measure of smallest angle.**
(a) 45° (b) 57° (c) 60° (d) 30°

72. **The angles of a quadrilateral are in the ratio 1 : 2 : 3 : 4. Find the measure of the greatest angle.**
(a) 108° (b) 124° (c) 118° (d) 144°

73. **The four angles of a quadrilateral are in the ratio 3 : 5 : 7 : 9. Find the sum of simplest and largest angle.**
(a) 120° (b) 150° (c) 180° (d) 240°

74. **The four angles of a quadrilateral are in the ratio 1 : 2 : 3 : 4. Find the measure of smallest and greatest.**
(a) 108° (b) 124° (c) 118° (d) 180°

75. **Which of the following angles do not form a quadrilateral.**
(a) 100°, 60°, 80°, 120°
(b) 80°, 70°, 100°, 60°
(c) 110°, 70°, 100°, 80°
(d) 120°, 50°, 110°, 80°

76. **Which of the following angles form a quadrilateral.**
(a) 55°, 105°, 110°, 90°
(b) 45°, 115°, 90°, 70°
(c) 30°, 80°, 70°, 120°
(d) 150°, 60°, 80°, 40°

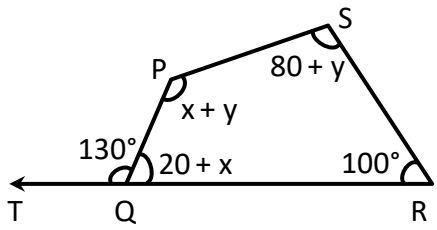
77. **Find the value of x if measure of angles of a quadrilateral are $(x + 20)$ $(2x + 5)$ $(3x - 10)$ and $(4x - 25)$**
(a) 27° (b) 33° (c) 43° (d) 37°

78. **Two angles of a quadrilateral are each 90° and the remaining two angles are such that one is three times the other. Find the smaller angle between these two.**
(a) 45° (b) 50° (c) 60° (d) 35°

79. **Which of the following statement is incorrect ?**
(a) a parallelogram is a four-sided figure whose opposite sides are parallel.
(b) A rhombus is a parallelogram all of whose sides are equal.
(c) The diagonals of a parallelogram are equal.
(d) The diagonals of a rectangle are equal.

80. **ABCD is a parallelogram $\angle A = 120°$ Find $\angle D$**
(a) 120° (b) 60°
(c) 100° (d) 80°

81. Find the value of x and y



(a) 50°, 30° (b) 30°, 50°
(c) 40°, 80° (d) 80°, 40°

82. Which of the following is a regular quadrilateral

(a) rectangle (b) parallelogram
(c) rhombus (d) square

83. A quadrilateral having all sides equal is a

(a) equilateral triangle
(b) rectangle
(c) parallelogram
(d) rhombus

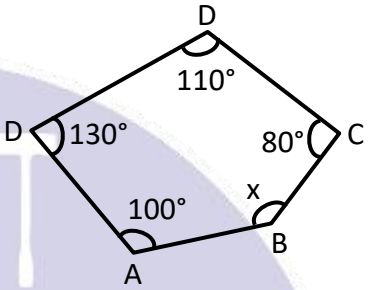
84. A parallelogram in which one of the angles is a right angle is called a

(a) rectangle (b) square
(c) rhombus (d) trapezium

85. Which of the following is not a parallelogram

(a) square (b) trapezium
(c) rectangle (d) rhombus

86. Find the value of x



(a) 110° (b) 120°
(c) 130° (d) 140°

ANSWER-KEY													
1.	(A)	**2.**	(C)	**3.**	(D)	**4.**	(D)	**5.**	(B)	**6.**	(A)	**7.**	(D)
8.	(D)	**9.**	(B)	**10.**	(C)	**11.**	(D)	**12.**	(B)	**13.**	(A)	**14.**	(A)
15.	(C)	**16.**	(B)	**17.**	(C)	**18.**	(A)	**19.**	(A)	**20.**	(B)	**21.**	(B)
22.	(B)	**23.**	(C)	**24.**	(A)	**25.**	(B)	**26.**	(C)	**27.**	(D)	**28.**	(D)
29.	(A)	**30.**	(C)	**31.**	(C)	**32.**	(C)	**33.**	(B)	**34.**	(A)	**35.**	(C)
36.	(C)	**37.**	(C)	**38.**	(A)	**39.**	(C)	**40.**	(B)	**41.**	(A)	**42.**	(D)
43.	(B)	**44.**	(B)	**45.**	(D)	**46.**	(D)	**47.**	(C)	**48.**	(B)	**49.**	(B)
50.	(C)	**51.**	(C)	**52.**	(D)	**53.**	(C)	**54.**	(D)	**55.**	(C)	**56.**	(C)
57.	(B)	**58.**	(C)	**59.**	(C)	**60.**	(D)	**61.**	(B)	**62.**	(C)	**63.**	(C)
64.	(D)	**65.**	(B)	**66.**	(A)	**67.**	(C)	**68.**	(C)	**69.**	(A)	**70.**	(B)
71.	(A)	**72.**	(D)	**73.**	(C)	**74.**	(D)	**75.**	(B)	**76.**	(A)	**77.**	(D)
78.	(A)	**79.**	(C)	**80.**	(B)	**81.**	(B)	**82.**	(D)	**83.**	(D)	**84.**	(A)
85.	(B)	**86.**	(C)										

1. **26 is divided into parts. If one part is x, then the other part is:**
   (a) 13 (b) x - 13
   (c) 13 - x (d) 26 - X

2. **The number which is less than 15 by p**
   (a) p + 15 (b) p - 15
   (c) 15 - p (d) None

3. **The number which is more than 15 by p**
   (a) p + 15 (b) p - 15
   (c) 15 - p (d) None

4. **How many terms of 2x + 7y**
   (a) 2 (b) 3 (c) 5 (d) 6

5. **How many terms of $2x - 7xy + 2x^2$**
   (a) 3 (b) 5 (c) 2 (d) 4

6. **How many terms in the algebraic expression $2x^2 + 5xy + 6y^2 + 7xyz$**
   (a) 3 (b) 2 (c) 6 (d) 4

7. **Which of the following is monomial?**
   (a) 2x + 7y (b) 7x + 7y + 2xy
   (c) 2x (d) None

8. **Which of the following is binomial?**
   (a) 2x + 7y (b) 7x + 7y + 2xy
   (c) 2x (d) None

9. **Which of the following is trinomial?**
   (a) 2x + 7y (b) 7x + 7y + 2xy
   (c) 2x (d) None

10. **What is the coefficient of x in 3x + 2y**
    (a) 3 (b) 4 (c) 2 (d) 1

11. **What is the coefficient of x in -2x - 7y**
    (a) -2x (b) -2 (c) -x (d) -7

12. **What is the coefficient of x in 7xy?**
    (a) 7y (b) 7 (c) 7x (d) None

13. **How many terms are in monomial?**
    (a) 3 (b) 2 (c) 1 (d) 0

14. **How many terms are in binomial?**
    (a) 3 (b) 2 (c) 1 (d) 0

15. **How many terms are in trinomial?**
    (a) 3 (b) 2 (c) 1 (d) 0

16. **Write the coefficient of y^2 in $2xy - 7y^2$?**
    (a) 7 (b) 2x (c) -7 (d) -7y

17. **Find the sum of 2x and 7x**
    (a) 9x (b) 5x
    (c) 2x + 7x (d) None

18. **Write the sum of 2x and 12x**
    (a) 10x (b) 14x (c) 7x (d) 15x

19. **Write the sum of 7x and -7x**
    (a) 14x (b) 7x (c) 0 (d) -14x

20. **Write the sum of 2x + 3x and 6x**
    (a) 6x (b) 3x (c) 11x (d) 5x

21. **Write the addition of 2x and 6y**
    (a) 8x (b) 8y
    (c) 2x – 6y (d) 2x + 6y

22. **Add the following 2x + 7y and 14x**
    (a) 14x + 7y (b) 2x + 21y
    (c) 23x (d) 16 x + 7y

23. **Add the following 3x + 2y and 3x + 6y**
    (a) 6x + 8y
    (b) 3x + 12y
    (c) 8x + 12y
    (d) None

24. Find the sum of (-2x + 6y + 3z) and (3x – 6y + 2z)

(a) x + 5z (b) -2x + 3z

(c) -7x + 2y (d) None

25. Find the difference between the 8x and 2x

(a) 6x (b) 8x (c) 10x (d) None

26. Find the difference between the 12x and 3y

(a) 9x (b) 9y

(c) 12x – 3y (d) None

27. Subtract 2x from 12x

(a) -12x (b) 10x

(c) 14x (d) None

28. Subtract (12x + 6y) from (3x + 2y)

(a) 9x + 4y (b) 9x + 8y

(c) 12x + 6y (d) None

29. Find the addition (12x – 6y) and (14x – 2y)

(a) 28x – 8y (b) 8x – 28y

(c) 12x – 2y (d) None

30. Find the product of 2x and 6x

(a) $12x^2$ (b) 12x (c) 8x (d) 4x

31. Find the product of $5x^2$ and 7x

(a) $35x^3$ (b) 35x (c) $35x^2$ (d) None

32. Find the product of 5x and 7y

(a) 35xy (b) 35x (c) 35y (d) None

33. Find the product of $5x^2$ and $7y^3$

(a) 35xy (b) $35xy^3$

(c) $35x^2y^3$ (d) None

34. Find the product of 5x, 3y, $4x^2$ and $7y^3$

(a) 420xy (b) $420xy^3$

(c) $420x^3y^4$ (d) None

35. If x + 5 = 10, then find the value of x

(a) 1 (b) 8 (c) 5 (d) 7

36. If 4x + 6 = 26, then find the value of x

(a) 1 (b) 8 (c) 5 (d) 7

37. If x - 3 = 10, then find the value of x

(a) 13 (b) 8 (c) 5 (d) 7

38. If 3x - 7 = 20, then find the value of x

(a) 7 (b) 8 (c) 9 (d) 10

39. If $\frac{x}{5} = 3$, then find the value of x?

(a) 2 (b) 8 (c) 5 (d) 15

40. If $\frac{2x}{5} = 6$, then find the value of x?

(a) 2 (b) 8 (c) 5 (d) 15

ANSWER-KEY												
1.	(D)	**2.**	(B)	**3.**	(A)	**4.**	(A)	**5.**	(A)	**6.**	(D)	**7.**	(C)
8.	(A)	**9.**	(B)	**10.**	(A)	**11.**	(B)	**12.**	(A)	**13.**	(C)	**14.**	(B)
15.	(A)	**16.**	(C)	**17.**	(A)	**18.**	(B)	**19.**	(C)	**20.**	(C)	**21.**	(D)
22.	(D)	**23.**	(A)	**24.**	(A)	**25.**	(A)	**26.**	(C)	**27.**	(B)	**28.**	(D)
29.	(D)	**30.**	(A)	**31.**	(A)	**32.**	(A)	**33.**	(C)	**34.**	(C)	**35.**	(C)
36.	(C)	**37.**	(A)	**38.**	(C)	**39.**	(D)	**40.**	(D)				