CLASS - IX

1) Number of prime numbers between 1 and 100 is n^2+9 then $n^2-n+1=$ _____
   1) 12 2)13 3) 11 4) 25

2) $(a+b-c)^2+(a-b+c)^2+(a+b+c)^2+(a-b-c)^2=k(pa^2+qb^2+rc^2)$ then $k-p+q-r=$
   1) 4 2) 5 3) 0 4) 3

3) Who was the first mathematician to unify Algebra and geometry
   1) Hipparcus 2) R.A.Fisher 3) Newton 4) Descartes

4) $\sqrt{3\sqrt{3\sqrt{3\sqrt{.....\infty}}}}=x$ then $x^2-3x+6=$
   1) 6 2) 3 3) -2 4) 9

5) Area of quadrilateral formed by (+2, +2) (-2, + 2) (-2, -2) and (+2, -2) is _____
   1) 3 2) 1 3) 16 4) 15

6) Legs of a right Δ are 6 and 8. Then the altitude length drawn from vertex to its hypotenuse must be _____
   1) 2.4 2) 4.8 3) 6.2 4) 8.2

7) Evidence of circle drawing instruments at an earliest date is found in excavation at _____
   1) Harappa 2) Greece 3) Egypt 4) Chaina

8) "Every even number grater than 4 can be written as sum of two primes" is a conjecture stated by _____
   1) Euclid 2) Goldbach 3) Proclus 4) John Play Fair

9) $\sqrt[3]{x^2}=\sqrt[4]{x^3}\,;x>o$ then $\sqrt[5]{32x^2}=$_____
   1) 5 2) 2 3) 7 4) 6

10) A and B are complementary angles $(A\neq B)$ B and C are suplementary angles; C and D are adjecent angles then the true statement is
   1) B = C 2) A = D 3) C = A 4) B = D

11) Centre of circle passing through (5, 2), (0, $\sqrt{29}$), (2, -5) is _____

1) (0, 0) 2) (4, 5) 3) (1, 2) 4) (0, -8)

12) P, O, Q are respectively three points on a line. OS is a ray and OR, OT are angle bisectors of $\angle POS$ and $\angle SOQ$ respectively, then $\angle ROT$ =

1) 60^0 2) 90^0 3) 45^0 4) 80^0

13) $\left(1+\frac{1}{3}\right)\left(1+\frac{1}{4}\right)\left(1+\frac{1}{5}\right).....\left(1+\frac{1}{30}\right)$ = _____

1) lies between 10 and 11 2) lies between 8 and 9
3) lies between 14 and 15 4) lies between 7 and 7.5

14) $4x^2+5y^2=11,\ 5x^2+4y^2=16$ *then* $\frac{(\sqrt{3}-y)(\sqrt{3}+y)}{x^2}$ = _____

1) 1 2) 3 3) 4 4) 11

15) $x\sqrt{2}+y\sqrt{3}+z\sqrt{5}=0$ then $2x-3y+4z$ = _____(Where x, y, z are integers)

1) 7 2) 9 3) 0 4) Any integer

16) LCM of three positive integers which are in the ratio 5 : 4 : 3 is 2400. Then their HCF = _____

1) 40 2) 60 3) 50 4) 10

17) Vertex angle of a golden triangle

1) 45^0 2) 36^0 3) 72^0 4) 60^0

18) An operation $\oplus$ is defined by $a\oplus b=2a+3b-1$
(e.g $2\oplus3=4+9-1=12,\ 1\oplus5=2+15-1=16$) then $a\oplus e=5$ and $2a\oplus e=7$
$\Rightarrow 5a\oplus1=$_____

1) 12 2) 13 3) 0 4) 8

19) In a triangle ABC, side AC has been produce to D so that $\angle BCD=145^0$. If $\angle A:\angle B=3:2$ then $\angle B$=

1) 87^0 2) 36^0 3) 58^0 4) 66^0

20) $x^2-y^2=18;\ x>y\ \&\ x,y\in N$ then No. of solutions (x, y) is ____

1) 2 2) 0 3) 5 4) 3

21) Number of odd as well as square numbers between 1 and 1000 is x. Then $x^2+x-1=$ _____

1) 239 2) 178 3) 197 4) 301

22) ABC is a given triangle. DEF is another triangle formed by its mid points. Then $\frac{\Delta DEF}{\Delta ABC}+\frac{\Delta ABC}{\Delta DEF}=$ ____

1) 4.25 2) 3.75 3) 1.75 4) 2

23) $3^a2^b5^c=750;\ a,b,c\in N$ then $3^c2^a5^b=$ _____

1) 360 2) 270 3) 256 4) 175

24) $a+b+c=0\Rightarrow\frac{abc}{a^3+b^3+c^3}=x$ then

1) $0<x<1/2$ 2) $1<x<4/3$ 3) $2<x<20/7$ 4) $1<x^2<2$

25) In a particular case if CASE = 5231; CHAIR = 58206; TEACH = 71258 then 586037 =

1) CHASTE 2) CHRIST 3) STREET 4) CHEASE

26) $3x-4y+7=0$ is satisfied by $(2a,\ 3a-1)$ then $12a-20=$ ___

1) 8 2) 2 3) 7 4) 0

27) Remainder when $x^2(x^2+1)+1$ is divided by $1+x(1+x)$ is Ax^2+Bx+C then A - B + C = _____

1) 4 2) 1 3) 0 4) 3

28) Least value of $\frac{(5^x+5^{-x})^2}{4}$ is _____

1) 4 2) 1 3) 0 4) $\frac{25}{4}$

29) There are 20 spokes in a cycle wheel with length of the spoke 35cm. The length of the maximum curved space between 1st and 7th spokes is .....cm

1) 66 2) 77 3) 55 4) 44

30) Number of real soultions of $(a-1)^{1/2}+(1-a)^{1/2}=7$ is x, then $\sqrt{5x+4}+\sqrt{4-5x}=$

1) 4 2) 0 3) 1 4) 9

31) $(a-b)x^2+(b-c)x+(c-a)=0$ has equal roots then _____ (where $a\neq b\neq c$)

1) $b=\frac{a+c}{2}$ 2) $a=\frac{b+c}{2}$ 3) $c=\frac{a+b}{2}$ 4) $\frac{2a}{1}=\frac{b}{5}=\frac{c}{3}$

32) A rectangle of dimensions l and b satisfying $x^2-7x+12=0$ is inscribed in a circle of area .....

1) 1.25π 2) 3.75π 3) 5π 4) 6.25π

33) If $a+\frac{1}{b+\frac{1}{c}}=\frac{59}{7}$ then $(a-b-c)^3=$

1) 8 2) 64 3) 10 4) 27

34) $x+y(1+x)=5,\ y+z(1+y)=11$ *and* $z+x(1+z)=7$ then $(1+x)(1+y)(1+z)=$_____

1) 32 2) 24 3) 42 4) 28

35) Missing term in the sequence $\frac{1}{2},\frac{4}{9},\frac{9}{28},-,\frac{25}{126}$

1) $\frac{13}{65}$ 2) $\frac{16}{65}$ 3) $\frac{18}{73}$ 4) $\frac{14}{38}$

36) A real number is equal to cube of itself. The sum of all such numbers is _____

1) 8 2) -2 3) 0 4) 6

37) $x=2+\sqrt{3}\Rightarrow x^4+x^{-4}=a$ Then sum of digits of 'a' is _____

1) 14 2) 5 3) 18 4) 6

38) Arithmetic mean of set of a data of 1200 numbers is 17. If 2 is added to every number, their new mean is X. Then the product of digits of X must be ____

1) 3 2) 14 3) 9 4) 12

39) PQRS is a rectangle. T is mid point of PS. W is mid point of RT. Area of rectangle PQRS is 120cm². Then area of $\Delta QSW=$_____

1) 10 2) 15 3) 40 4) 30

40) If $a^2-8a+1=0$ then $\frac{1}{4}\left(a+\frac{1}{a}\right)=$

1) 2 2) 3 3) 8 4) 4

41) $\frac{1}{2\times3}+\frac{1}{3\times4}+\frac{1}{4\times5}+\frac{1}{5\times6}+\ldots\ldots+\frac{1}{99\times100}=$

1) 0.28 2) 0.25 3) 0.49 4) 0.57

42) p, q, r, s are four different numbers such that $p^3+q^3=r^3+s^3$ then the value of $p+q+r+s$ is .....

1) 19 2) 21 3) 32 4) 23

43) Two sides of a scalene triangle are connected by $x^2-8x+15=0$. Then number of possible scalene triangles form

1) 2 2) 3 3) 4 4) 5

44) The average of 5 consecutive odd numbers is 61. What is the difference between the highest and lowest numbers.

1) 2 2) 5 3) 8 4) 7

45) $i=\sqrt{-1}$ symbol was introduced by _____

1) C.F.Gauss 2) Ramanujan 3) Pascal 4) Newton

46) Number of numbers either divisible by 3 or by 5 in first 200 naturals is _____

1) 93 2) 87 3) 108 4) 68

47) A line $x+3y-c=0$ passes through the point (1, 3). Then it also passes through

1) (1, 7) 2) (2, 5) 3) (-2, 4) 4) (8, 2)

48) Co-ordinate Geometry was invented by _____

1) Rene Descarte 2) SL. Loney 3) Pythagorus 4) Euclid

49) In a parallelogram M is the midpoint of AB and DM intersect AC at X then $\frac{AX}{XC}=$ .....

1) $\frac{1}{2}$ 2) $\frac{2}{3}$ 3) $\frac{2}{5}$ 4) $\frac{3}{5}$

50) ABCD is a quadrilateral. AC is one diagonal. If $\angle A = 117^0, \angle B = 90^0, \angle BCA = (3Y+5)^0$ and $\angle CAD = 65^0$ then $\angle y$ = ...

1) 12^0 2) 11^0 3) 20^0 4) 15^0

51) Number of parallelograms formed when 4 parallel lines are cut by another set of three parallel lines is.....

1) 18 2) 12 3) 24 4) 36

52) The diagonal of a rectangular field is 100m. length and breadth are in the ratio of 3:4 then its area is .....sq.m

1) 1400 2) 4800 3) 6400 4) 8400

53) In a parallelogram ABCD the angular bisectors of $\angle A$ and $\angle B$ are intersecting at P then $\angle APB$ =...

1) 30^0 2) 45^0 3) 60^0 4) 90^0

54) The angular bisectors of a parallelogram forms .....

1)Parallelogram 2) Rhombus 3) Rectangle 4) Square

55) If the diagonal of a square is 'd' units, then the diagonal of the square whose area is double that of the first square is .....

1) 2d 2) $\sqrt{2}d$ 3) d^2 4) $\frac{d^2}{2}$

56) The ratio of monthly incomes of Anand and Mohan is 9 : 10 and ratio of their monthly savings is 9 : 10. If the monthly expenditure of Mohan is Rs.15000; Monthly expenditure of Anand is Rs.____

1) 12000 2) 9000 3) 8500 4) 13500

57) The number of sides of a regular polygon if $\frac{x}{y} = \frac{2}{5}$ where 'x' is the exterior angle and 'y' is the corresponding interior angle of the polygon is .....

1) 5 2) 7 3) 6 4) 8

58) The mean of first 'n' natural numbers is $\frac{5n}{9}$, then 'n' = ...

1) 4 2) 5 3) 9 4) 10

59) The mean of 13 observations is 14. If the mean of the first 7 observations is 12 and that of the last 7 observations is 16 then the value of 7^{th} observation is .....

1) 12 2) 13 3) 14 4) 15

60) A cricketer has a certain average for 10 innings. In the eleventh inning, he scored108 runs, thereby increasing his average by 6 runs. His new average is ...

1)48 runs 2) 52 runs 3) 55 runs 4) 60 runs