CLASS X
GUESS PAPER
MATHS

Section-A

1. If 18, a, b,-3 are in A.P. find a+b.
2. If 2 and -2 are the roots of a quadratic equation, find the equation.
3. At a certain time of the day the length of the shadow of a pole was found to be $\sqrt{3}$ times the height of the pole. What is the angle of elevation of the Sun?
4. A tangent to a circle of radius 5 cm is drawn from a point 12 cm frm the centre. Find the length of tangent.

Section-B

5. A quadrilateral PQRS circumscribes a circle. Show that PQ+RS=PS+QR
6. Show that the points (7,10),(3,-4) and (-2,5) are vertices of an isosceles triangle.
7. Find a relation between x and y if P(x,y) is equidistant from the points (-3,7) and (2,5).
8. A bag contains cards numbered 1,2,3,…..20. A card is drawn at random. What is the probability that the drawn card bears a prime number?
9. A letter is chosen from "MATHEMATICS". What is the probability that it is a vowel?
10. Find the surface area of a solid hemisphere of radius 7 cm.

Section-C

11. Sum of 'n' terms of an A.P. is $4n^2+5n$. Find n^{th} term.
12. Solve for 'x':- $6a^2x^2-7abx-3b^2 =0$
13. A square park has an edge of 45m. There circular flower beds at each corner of radius 3.5 m. Find the remaining area of the park and the cost of maintaining the flower beds at Rs.25/m^2
14. Sum of first eight terms of an A.P. is 140 and the sum of next 16 terms is 856 find A.P.
15. Find the Area of a quadrilateral whose vertices are a(1,1), B(7,-3) C(12,2) and D(7,21).
16. The angle of elevation of top and bottom of a 5m high flag staff atop a building –from a point on the ground-are 60° and 45° respectively. Find the height of the building.
17. Prove that intercept tangent between two parallel tangents subtends right angle at the centre of the circle.
18. Draw a circle of radius 2 cm and construct tangents toit from a distance of 5 cm from the centre.
19. Find the difference between the areas of a sector of 120° and major segment given the radius of the circle is 4.2 cm.
20. A race track is in the form of a ring whose outer and inner circumferences are 286 m and 264 m respectively. Find the width of the track.

Section-D

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21. An NGO distributed Rs.3000 among children of an orphanage. Had there been 5 children less each would have got Rs. 20 more. Find the number of children in the orphanage. What is the value reflected by the NGO?

22. A person borrowed R. 60,000 to be repaid in 40 instalments that form an A.P. After paying 25 instalments the person dies leaving 40% of the loan unpaid. Find the value of the first instalment.

23. If the equation $(b-c)x^2 + (c-a)x + (a-b) = 0$ has equal roots show that $2b = a+c$.

24. If the point $P(x,y)$ is equidistant from $Q(a+b, b-a)$ and $R(a-b, a+b)$ prove that $ax = by$.

25. The incircle of triangle ABC whose radius is 3 cm divides one of the sides at point of contact into two segments of 5cm and 9 cm. Determine the other two sides of the triangle.

26. Prove that opposite sides of a quadrilateral circumscribing a circle subtend supplementary angles at the centre.

27. A bag contains 18 balls some of which are blue and rest are red. By adding 6 more blue balls the probability of drawing a blue ball increases by 5/24. Find the number of each kind of ball.

28. Area of an equilateral triangle is 249.408 cm^2. From each vertex a circle is drawn with radius equal to half of the side of the triangle. Find the area of the triangle not included in the circles.($\sqrt{3}=1.732, \pi=3.14$)

29. A tent of height 77 dm is in the form of cylinder upto a height of 44dm and conical above it. If the diameter of the bas is 36 m find the cost of canvas used to make the tent at Rs.3.50/m^2

30. A bucket is in the form of a frustum of a cone and holds 49.049 litres of water. The radii of top and bottom are 21 cm and 17.5 cm respectively. Find the height of the bucket.

31. A man standing on the deck of a boat 25 m above the water level observes angle of elevation of a cloud to be 45° and angle of depression of the reflection of the cloud in water to be 60°. Find the height of the cloud.

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