



Full Question Paper
Maths, IX Class



General Instructions:

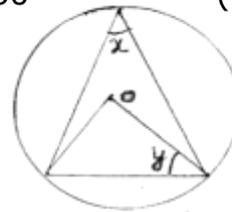
- 1.** All questions are compulsory.
- 2.** The question paper is of 34 questions divided into four sections –A, B, C and D. Section A contains 8 questions of 1 mark each. Section B is of 6 questions of 2 marks each, section C is of 10 questions of 3 marks each and Section D is of 10 questions of 4 marks.
- 3.** There is no overall choice. However, internal choice has been provided in 1 question of two marks each, 4 questions of three marks each and 2 questions of four marks each.
- 4.** Question numbers 1 to 8 in section A are multiple choice questions where you are to select one correct option out of four given.

Section- A

1. The graph of $y=a$ is a straight line parallel to : (a) x axis (b) y axis (c) line $y=x$ (d) line $x+y=0$

2. What is the value of m for which $(-4, -1)$ a solution of the equation, $-x + my = 1$? (a) 5 (b) 3 (c) -3 (d) -5 .

3. In the fig. the value of $\angle x + \angle y$ is. (a) 50° (b) 80° (c) 100° (d) 90°



4. OC is drawn perpendicular the centre O of the circle to the chord AB. If $OB=5\text{cm}$ and $OC=3\text{cm}$, the length of the chord AB is (a) 3cm (b) 4cm (c) 6cm (d) 8cm

5. The circumference of the base of a right circular cone is 44cm and its slant height is 10cm . Its curved surface area is : (a) $220/7 \text{ cm}^2$ (b) $200/7 \text{ cm}^2$ (c) 200 cm^2 (d) 220 cm^2 .

6. A conical tent is 10m high and the radius of its base is 24m . The slant height of the tent is : (a) 26m (b) 27m (c) 25m (d) none of these.

7. In any triangle medians are concurrent and their point of intersection is called : (a) circumcentre (b) centroid (c) incentre (d) orthocentre.

8. The mean of 16 numbers is 8. If 2 is multiply to every number, what will be the new mean.

(a) 16 (b) 12 (c) 10 (d) 8

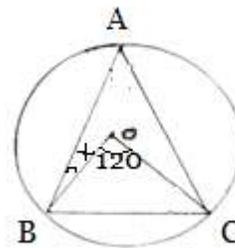
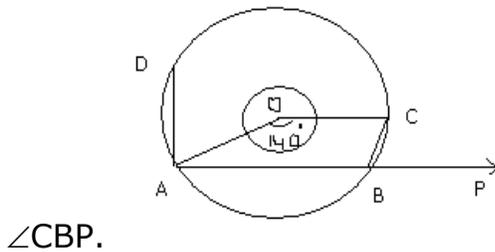
Section-B

9. Find four solutions for $x=-2$. **Or** Find k if $(2,3)$ is a solution of $2x-y=k$.

10. If the diagonals of quadrilateral bisect each other then prove that quad. is parallelogram.

11. Show that the diagonal of a parallelogram divide it into two triangles of equal area.

12. In the given fig., O is the centre of the circle. The angle subtended by arc ABC at the centre is 140° . AB is produced to P . Determine $\angle ADC$ and



13. Find x if O is the centre of the circle.

14. Find median of :18,16,3,24,29,32,46. If 3 is replaced by 13 what will be the new median ?

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Section-C

15. Draw the graph of the linear equation $y=3x$. **Or** Solve $7y+15=2y+5$ and represent on (a) Number line (b) in the Cartesian plane.
16. Find the points where the line represented by the equation $5x-4y+20=0$ cuts x-axis and y-axis.
17. In trapezium ABCD if , $BC=17$ cm $AB=16$, $DC=8$ cm, then find area of trapezium.
18. Prove that parallelogram on the same base and between same parallel are equal in area. **Or** ABCD is a rectangle .Diagonals AC and BD intersect at O . If $\angle OAB = 35^\circ$, find the measure of $\angle DOC$.
19. If two equal chords of a circle intersect within the circle, prove that the line joining the point, of intersection to the centre makes equal angles with the chords.
20. A river 3m deep and 40m wide is flowing at the rate of 2km per hour. How much water will fall into the sea in a minute.
21. A cylindrical bowl of internal radius 9 cm and height 15 cm is full of liquid. The whole of the liquid is to be filled in small cylindrical bottles of diameter 3 cm each and height 4cm. each bottle is sold for Rs. 5, then find the amount earned.
22. The slant height and diameter of a conical tomb are 25m and 14m. Find the cost of constructing it at Rs.2 per cubic metre. (take $\pi=22/7$) **Or** A hemispherical bowl has inner diameter 10.5cm. Find the cost of tin plating it on the inside at the rate of Rs. 16 per 100cm^2 .
23. Find the mean of the following data by using shortcut method.

Marks	20	22	25	30	35	39	45	50	Total
Frequency	4	6	8	10	8	7	5	2	50

Or If the mean of the following distribution is 21, find the value of x

x:	10	15	20	25	30
f:	6	10	x	10	8

24. The weekly pocket expenses of students are given in the following table :

Pocket expenses (in Rs.)	No. of students
145	7
140	4
159	10
171	6
158	3
147	8
165	12

Find the probability that the weekly pocket money of a student is : (a) Rs.159 (b) more than Rs. 159 (c) less than Rs. 159

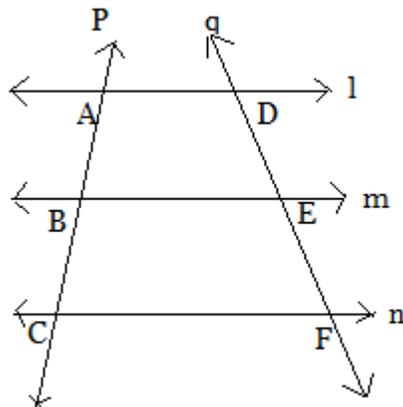
SECTION-D

25. Construct a triangle ABC whose perimeter is 10.5cm and its base angles are 60° and 45° .

26. 4 years before , age of a mother was 3 times the age of her daughter .

Write a linear equation to represent this situation and draw its graph.

27. In a given fig. $AB=BC$ and $l//m//n$. Is $DE=EF$? if yes Justify it and state the

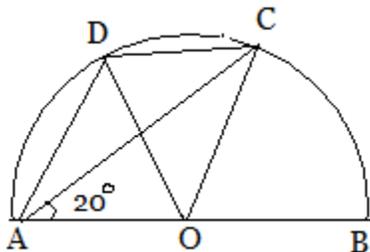


theorem which is used to justify it.

28. The mid points of the sides BC, CA and AB of $\triangle ABC$ are X, Y and Z respectively .Prove that $\triangle XYZ$ is a parallelogram.

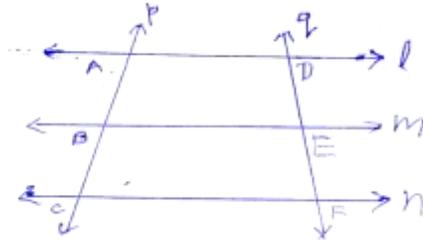
29. Prove that the angle subtended by an arc at the centre is double the angle subtended by it at any point on the remaining part of the circle. **Or**
If two equal chords of a circle intersect within the circle . Prove that the segment of one chord are equal to corresponding segments of the other chord.

30. In the given figure, AB Is a diameter of a circle With centre O and $CD \parallel BA$. If $\angle BAC = 20^\circ$, find (i) $\angle BOC$ iii) $\angle CAD$ iv) $\angle ADC$



31. ABCD is a trapezium with $AB \parallel CD$. P and Q are the mid points of diagonals AC and BD respectively. Prove that $PQ = \frac{1}{2}(AB - CD)$.

32. The mean of the numbers 21, 30, 16, x, and 9 is 18. The median of the numbers 23, 30, 31, $3x$, $3x + y$, 60, 67, and 69 is 47.5. What is the value of y?



33. If V is the volume of a cuboid of dimensions a, b, c and s is its surface area then prove that: $\frac{1}{V} = \frac{2}{s} \left(\frac{1}{a} + \frac{1}{b} + \frac{1}{c} \right)$. Or It costs Rs.2200 to paint the inner curved surface of a cylindrical vessel 10m deep. If the cost of painting is at the rate of Rs. 20 per m^2 , find the
- Inner curved surface area of the vessel.
 - Radius of the base.
 - Capacity of the vessel.
34. What is the probability of 53 Sundays in (i) a leap year (ii) a non leap year.