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FOR MAHARASHTRA BOARD (MSBSHSE) CLASS 10 EXAM PREPARATION

Maharashtra Board (MSBSHSE) Class 10 2026 March Session Question Paper · Maths Part 2 (Geometry)

EXAM
Maharashtra Board (MSBSHSE) Class 10

YEAR
2026

TYPE
March Session Question Paper

SUBJECT
Maths Part 2 (Geometry)

N 932

Seat Number | | | | | | | |

2026 III 09 1100 – N 932– MATHEMATICS (71) GEOMETRY—PART II (E)

(REVISED COURSE)

Time : 2 Hours **(Pages 11)** **Max. Marks : 40**

Note :—

(*i*) *All* questions are compulsory.

(*ii*) Use of a calculator is not allowed.

(*iii*) The numbers to the right of the questions indicate full marks.

(*iv*) In case of MCQs [Q. No. **1(A)**] only the first attempt will be evaluated and will be given credit.

(*v*) Draw proper figures wherever necessary.

(*vi*) The marks of construction should be clear. Do not erase them.

(*vii*) Diagram is essential for writing the proof of the theorem.

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1. (A) For each of the following sub-question four alternative answers are given. Choose the correct alternative and write its alphabet. 4

(1) Out of the following which is the Pythagorean triplet ?

(A) (1, 5, 10)

(B) (3, 4, 5)

(C) (2, 2, 2)

(D) (5, 5, 2)

(2) Two circles having radii 4 cm and 5 cm touch each other internally. Then the distance between the centres is .....

(A) 4 cm

(B) 5 cm

(C) 1 cm

(D) 9 cm

(3) Out of the following points ..... lies to the right of the origin on X-axis.

(A) (–2, 0)

(B) (0, 2)

(C) (2, 3)

(D) (2, 0)

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(4) If the side of the cube is 5 cm, then the volume of that cube is .....

(A) 10 cm^3

(B) 100 cm^3

(C) 125 cm^3

(D) 25 cm^3

(B) Solve the following sub-questions : **4**

(1) The ratio of corresponding sides of similar triangles is 3 : 5, then find the ratio of their areas.

(2) Find the side of a square if its diagonal is $10\sqrt{2}$ cm.

(3) If the measure of minor arc is 70°, then find the measure of corresponding major arc.

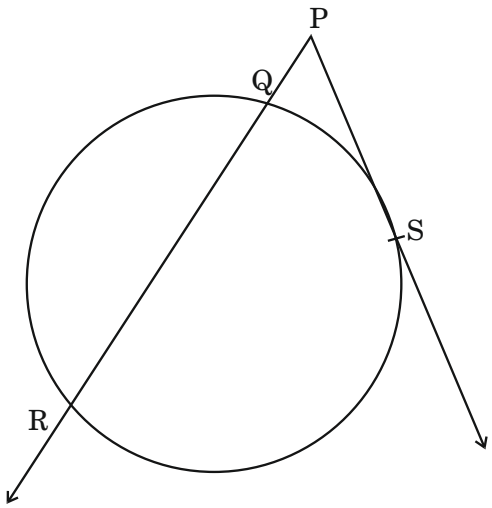
(4) Angle made by the line with the positive direction of X-axis is 45°, find the slope of line.

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2. (A) Complete the following activities and rewrite it (any *two*) : 4

(1) In the following figure, seg PS is a tangent segment, line PR is a secant. If PQ = 3.6, QR = 6.4, find PS.



Activity :

PS^2 = ☐ × PR (Tangent secant segment theorem)

= PQ × [PQ + QR]

= ☐ × [3.6 + 6.4]

= 3.6 × ☐

∴ PS^2 = 36

PS = ☐

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(2) If $\sec\theta = \frac{25}{7}$, find the value of $\tan\theta$.

Solution :

$1 + \tan^2\theta = \square$

$\therefore \quad 1 + \tan^2\theta = \square^2$

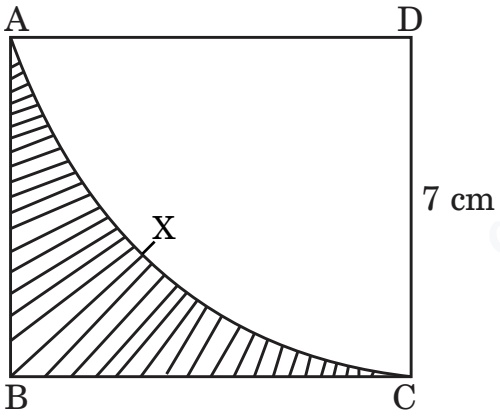
$\therefore \quad \tan^2\theta = \frac{625}{49} - \square$

$= \frac{625 - 49}{49}$

$\therefore \quad \tan^2\theta = \frac{576}{49}$

$\therefore \quad \tan\theta = \square$

(3) In the following figure, side of square ABCD is 7 cm. With centre D and radius DA, sector D-AXC is drawn. Fill in the following boxes properly and find out the area of shaded region :



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Solution :

Area of square = $(\text{side})^2$

$= (7)^2$

$\therefore$ Area of square = $\square$ cm^2

If area of sector (D-AXC) = 38.5 cm^2, then

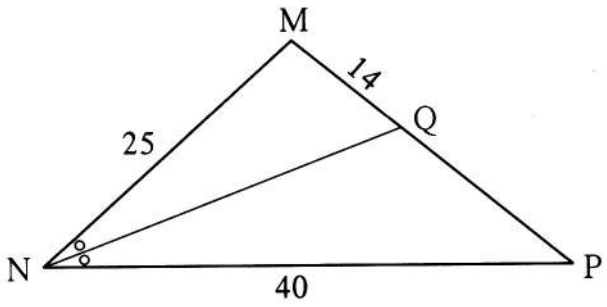
A (shaded region) = A $\square$ – A $\square$

$= 49\ cm^2 - 38.5\ cm^2$

= $\square$ cm^2

(B) Solve the following sub-questions (any *four*) : 8

(1) Find QP using given information in the figure :

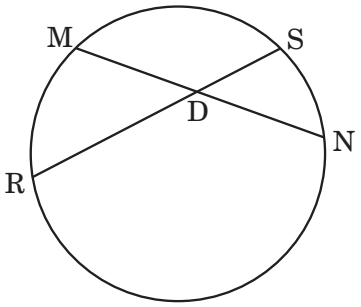


(2) In ΔRST, $\angle S = 90^\circ$, $\angle T = 30^\circ$, RT = 12 cm, then find RS and ST.

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(3) In the following figure, chord MN and chord RS intersect at point D. If RD = 15, DS = 4, MD = 8, find DN.

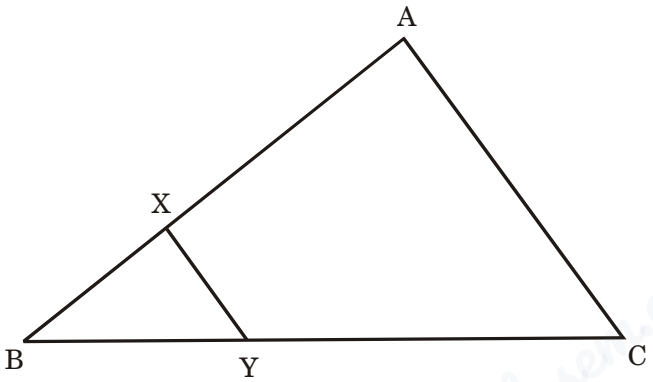


(4) Find the co-ordinates of the midpoint of the line segment joining points P(0, 6) and Q(12, 20).

(5) Prove that : $\sin^2 \theta + \cos^2 \theta = 1$.

3. (A) Complete the following activities and rewrite it (any ***one***) **: 3**

(1) In the following figure, seg XY || side AC. If 2AX = 3BX and XY = 9, complete the activity to find the value of AC.



Activity :

$2AX = 3BX$

$\therefore \quad \frac{AX}{BX} = \frac{3}{2}$

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$\therefore \quad \frac{AX + BX}{BX} = \frac{\square + \square}{2}$ ..... (By componendo)

$\frac{AB}{BX} = \frac{\square}{2}$

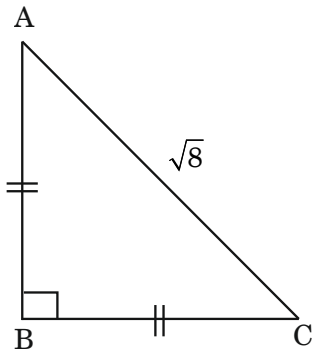
$\Delta BCA \sim \Delta BYX$ ..... ($\square$ Test of similarity)

$\therefore \quad \frac{BA}{BX} = \frac{AC}{XY}$ ..... (Corresponding sides of similar triangles)

$\therefore \quad \frac{5}{\square} = \frac{AC}{9}$

$\therefore \quad AC = \square$

(2) For finding AB and BC with the help of information given in the following figure, complete the following activity :



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Activity :

AB = BC ..... [ ]

$\therefore$ $\angle$ BAC = [ ]

$\therefore$ AB = BC = [ ] $\times$ AC

$= \frac{1}{\sqrt{2}} \times$ [ ]

$= \frac{1}{\sqrt{2}} \times 2 \times$ [ ]

AB = BC = [ ]

(B) Solve the following sub-questions (any *two*) : 6

(1) Prove that : The tangent segments drawn from an external point to the circle are congruent.

(2) Draw a circle with centre O and radius 3.5 cm, take a point P at a distance 5.7 cm from the centre. Draw tangents to the circle from point P.

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(3) Find the co-ordinates of point P, if P divides the line segment joining the points A(–1, 7) and B(4, –3) in the ratio 2 : 3.

(4) A bucket is frustum shaped. Its height is 28 cm. Radii of circular faces are 12 cm and 15 cm. Find the capacity of the bucket in litres. $\left(\pi = \frac{22}{7}\right)$.

4. Solve the following sub-questions (any *two*) : 8

(1) Δ ABC ~ Δ ADE,

In Δ ABC, AB = 6.3 cm, $\angle$ CAB = 50°, AC = 5.6 cm and $\frac{AB}{AD} = \frac{7}{5}$.

Construct Δ ADE.

(2) Surface area of sphere and total surface area of cube are same. Show that the ratio of the volume of the sphere to that of the cube is $\sqrt{6} : \sqrt{\pi}$.

(3) In Δ ABC, A-X-B and A-Y-C is such that segment XY || side BC. Segment XY divides Δ ABC in two equal areas, then find $\frac{BX}{AB}$.

5. Solve the following sub-questions (any *one*) : 3

(1) Seg PQ is a chord of a circle. Arc PXQ is a major arc and Arc PYQ is a minor arc. $\angle$ POQ is central angle of the circle :

(*a*) Draw the figure from given information.

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(*b*) Find the measure of $\angle$ PXQ, $\angle$ PYQ and add $m\angle$PXQ, $m\angle$PYQ.

(*c*) Find the measure of $\angle$POQ. Write the relation between $\angle$ PXQ and $\angle$ POQ.

(2) Two eagles are flying in the sky at height of $10\sqrt{3}$ m above the ground. A boy standing at a point on the ground looks towards the eagles making angles of elevation of 60° and 30° respectively. Find the distance between these two eagles.