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FOR MAHARASHTRA BOARD (MSBSHSE) CLASS 10 EXAM PREPARATION

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

EXAM
Maharashtra Board (MSBSHSE) Class 10

YEAR
2026

TYPE
June Session Question Paper

SUBJECT
Maths Part 2 (Geometry)

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DATE : 23/06/2026 **SUBJECT : MATHEMATICS (71)** GEOMETRY—PART II (E)

TIME : 11.00 SYLLABUS : (REVISED COURSE)

DURATION : **2** Hours TOTAL PAGES : **6** TOTAL MARKS : **40**

Note :— (*i*) *All* questions are compulsory.
(*ii*) Use of a calculator is not allowed.
(*iii*) The numbers to the right of 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.

1. (A) Choose the correct alternative from the given : **4**

(*i*) Out of the following which is a Pythagorean triplet ?
(*a*) (1, 5, 10) (*b*) (5, 12, 13)
(*c*) (2, 3, 4) (*d*) (5, 5, 2)

(*ii*) What is the measure of semicircular arc of a circle ?
(*a*) 360° (*b*) 90°
(*c*) 180° (*d*) 60°

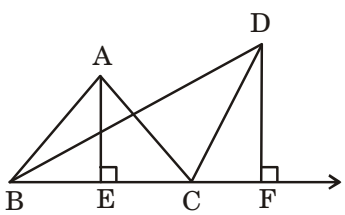
(*iii*) What is the equation of Y-axis ?
(*a*) $x = 0$ (*b*) $x = a$
(*c*) $y = 0$ (*d*) $y = b$

(*iv*) Radius of a sector of a circle is 35 cm and length of its arc is 22 cm. What is the area of the sector ?
(*a*) 285 cm^2 (*b*) 185 cm^2
(*c*) 385 cm^2 (*d*) 85 cm^2

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

(*i*) Find the diagonal of square whose side is 5 cm.

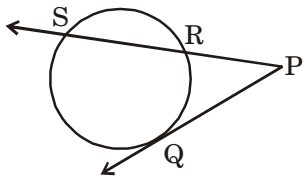
(*ii*) In the following figure, seg AE $\perp$ seg BC, seg DF $\perp$ line BC, AE = 4, DF = 6, then find $\frac{A(\Delta ABC)}{A(\Delta DBC)}$.



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(*iii*) In the following figure, ray PQ touches the circle at point Q, PQ = 12, PR = 9. Find PS.



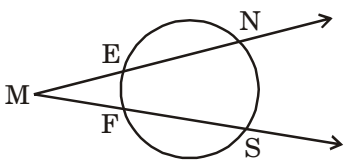
(*iv*) Angle made by the line with the positive direction of X-axis is 30°. Find slope of the line.

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

(*i*) In the following figure, chord EN and chord FS intersect each other at point M in the exterior of the circle.

If m (arc NS) = 125°, m (arc EF) = 37°, then complete the following activity to find ∠NMS.



Activity : Chord EN and chord FS intersect each other at point M in the exterior of the circle.

$$m\angle NMS = \frac{1}{2}\left[\square - m(\text{arc EF})\right]$$

$$= \frac{1}{2}\left[\square - 37\right]$$

$$= \frac{1}{2} \times \square$$

$$\therefore \quad m\angle NMS = \square$$

(*ii*) If $\sin\theta = \frac{20}{29}$, then complete the following activity to find $\cos\theta$.

Activity : $\sin^2\theta + \cos^2\theta = 1$

$$\left(\square\right)^2 + \cos^2\theta = 1$$

$$\frac{400}{841} + \cos^2\theta = 1$$

$$\therefore \quad \cos^2\theta = 1 - \square$$

$$\cos^2\theta = \square$$

Taking square roots of both sides

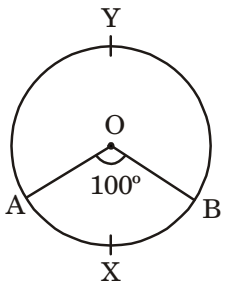
$$\therefore \cos\theta = \square$$

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(*iii*) In the following figure, point O is the centre of the circle, ∠AOB = 100°. Complete the following activity with the help of given figure.

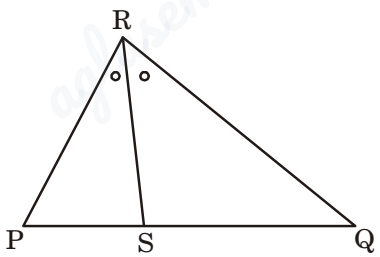


Activity :

Type of arc	Name of the arc	Measure of the arc
Minor arc		
Major arc		

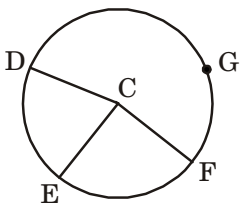
(B) Solve the following sub-questions (any *four*) : **8**

(*i*) In the following figure, in Δ PQR, seg RS bisects ∠R. If PR = 15, QR = 20, PS = 12, then find QS.



(*ii*) Find the length of diagonal of a rectangle whose length is 35 cm and breadth is 12 cm.

(*iii*) In the following figure, point G, D, E, F are concyclic points of a circle with centre C. ∠ECF = 70°, *m* (arc DGF) = 200°. Find *m* (arc DE).



(*iv*) Find the distance between the points P (–1, 1) and Q (5, –7).

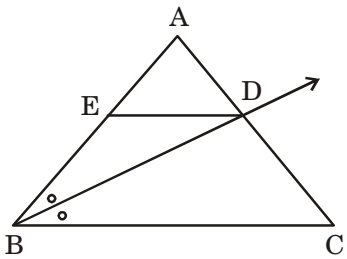
(*v*) A person is standing at a distance of 80 m from a Church looking at its top. The angle of elevation is of 45°. Find the height of the Church.

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

(*i*) In the following figure, in ΔABC ray BD bisects $\angle ABC$, A – D – C, seg ED $\parallel$ side BC, A – E – B, then to prove that $\frac{AB}{BC} = \frac{AE}{EB}$, complete the following activity.



Activity : In ΔABC, ray BD bisects $\angle B$.

$\therefore \frac{AB}{BC} = \frac{\square}{\square}$ ..... (I) (Angle bisector theorem)

In ΔABC, seg ED $\parallel$ side BC.

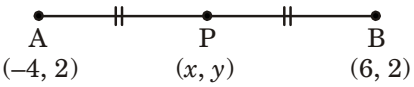
$\therefore \frac{AE}{EB} = \frac{\square}{DC}$ ..... (II) $\square$

$\therefore \frac{AB}{\square} = \frac{\square}{EB}$ ..... from (I) and (II)

(*ii*) If P is the midpoint of segment joining the points A (–4, 2) and B (6, 2), then complete the following activity to find the co-ordinates of point P.

Activity : In the given example,

suppose



$(x_1, y_1) = (-4, 2)$, $(x_2, y_2) = (6, 2)$ and

Let co-ordinates of P are (x, y).

According to midpoint formula,

$$x = \frac{x_1 + x_2}{2} = \frac{\square + \square}{2} = \frac{2}{2}$$

$$x = \square$$

$$y = \frac{y_1 + y_2}{2} = \frac{\square + \square}{2} = \frac{4}{2}$$

$$y = \square$$

$\therefore$ Co-ordinates of midpoint are (1, 2).

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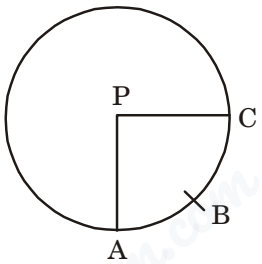
(B) Solve the following sub-questions (any *two*) : **6**

(*i*) In Δ PQR, point S is the midpoint of side QR. If PQ = 11, PR = 17, PS = 13, find QR.

(*ii*) Prove that, opposite angles of a cyclic quadrilateral are supplementary.

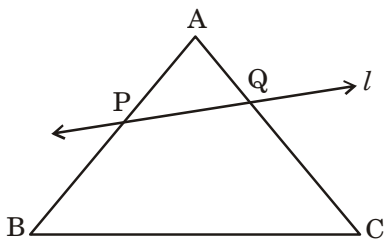
(*iii*) Draw a circle of radius 3.3 cm. Draw a chord PQ of length 6.6 cm. Draw tangents to the circle at point P and Q. Write your observation about the tangents.

(*iv*) In the following figure if A (P – ABC) = 154 cm^2, radius of the circle is 14 cm, find : (*a*) $m\angle APC$, (*b*) l(arc ABC).



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

(*i*) In the following figure, line l intersects side AB and side AC of Δ ABC in points P and Q respectively. Show that $\frac{A(\Delta APQ)}{A(\Delta ABC)} = \frac{AP \times AQ}{AB \times AC}$.



(*ii*) Draw a circle having radius 3 cm. Draw chord XY = 5 cm. Draw tangents to a circle at point X and Y without using centre.

(*iii*) Find the number of coins of 2.2 cm diameter and 0.2 cm thick, can be made by melting a metallic right circular cylinder of height 0.2 m and diameter 8.8 cm.

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

(*i*) AB is a chord of a circle with centre O. AC is a diameter of a circle. Line AT is a tangent at A. Write the answers of the following questions :

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

(*b*) Find the measure of $\angle CAT$.

(*c*) Find the measure of $\angle ABC$.

(*ii*) α is acute angle. If $3\sin\alpha - 4\cos\alpha = 0$, then find the values of $\tan\alpha$ and $\sec\alpha$.