

**PARSHVAA EDU
MENTOR**

Std.: 10th (ENGLISH)

Sub: Geometry

Time: 2 hour

XYZ CENTRE

Marks: 40

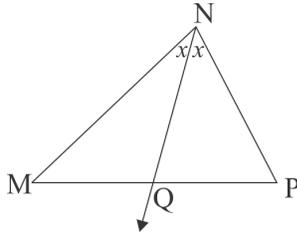
Chapters: All

Q.1 Solve any five sub-questions: (5)

- (1) Sides of triangles are 8, 15, 17. Determine whether the triangle is right angled triangle?
- (2) Length of tangent segment which is drawn through the external point of circle is 6 cm then the length of other tangent segment is
- (3) Find where the angle lies, if the terminal arm passes through $(-3, -3)$
- (4) Find the slopes of lines with inclinations 45°
- (5) The lengths of the two tangent segments to a circle drawn from an external point are
- (6) If for a solid $V = 10$, $E = 18$, Find F .

Q.2 Solve any four sub-questions: (8)

- (1) In the figure, Point Q is on the side MP such that $MQ = 2$ and $MP = 5.5$. Ray NQ is the bisector of $\angle MNP$ of $\triangle MNP$, find $MN : NP$.

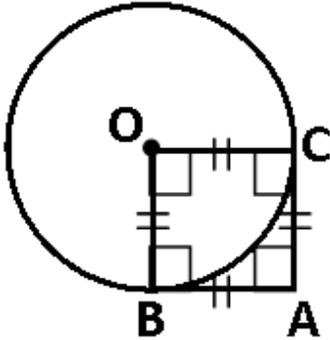


- (2) Find the radius of the circle passing through the vertices of a right angled triangle when lengths of perpendicular sides are 6 and 8.
- (3) If $(-2, -3)$ is a point on the line $2y = mx + 5$, then find m .
- (4) Write the equation of the line passing through point P and having slope m . $P(-3, 7)$ and $m = \frac{1}{2}$
- (5) Draw the figure and write answers:
For the angle in standard position if the initial arm rotates 25° in anticlockwise direction, then state the quadrant in which the terminal arm lies.
- (6) If the area of the minor sector is 392.5 sq. cm and the corresponding central angle is 72° , find the radius ($\pi=3.14$).

Q.3 Solve any three sub-questions:

(9)

- (1) Show that the line joining $(-1, 1)$ and $(-9, 6)$ are parallel to the line joining $(-2, 14)$ and $(6, 9)$
- (2) In Figure, O is the centre of the circle. AB and AC are tangents drawn from A, and $BA \perp CA$, Prove that BACO is a square.

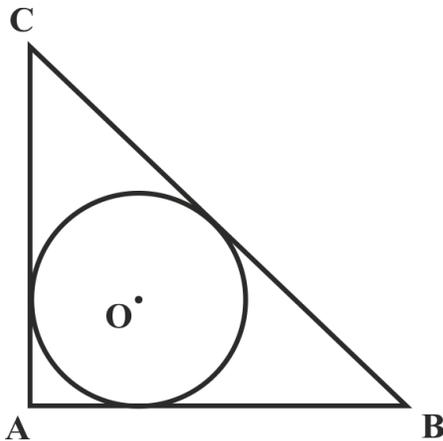


- (3) Construct a circumcircle of $\triangle ABC$ such that $AB = 5$ cm, $AC = 12$ cm, $\angle BAC = 90^\circ$.
- (4) From the top of a light house, an observer looks at a ship and finds the angle of depression to be 60° . If the height of the light house is 90m, then find how far is that ship from the lighthouse. (Mar"14)
- (5) Suppose ABC is triangle inscribed in a circle, the bisector of $\angle ABC$ intersects the circle again in D, the tangent at D intersects the line BA and line BC in E and F respectively
Prove that $\angle EDA = \angle FDC$

Q.4 Solve any two sub-questions:

(8)

- (1) Find the area of a regular polygon having 15 sides which is inscribed in a circle of radius 4 cm. ($\sin 24 = 0.407$)
- (2) $\triangle ABC$ is a right angled triangle with $\angle A = 90^\circ$. A circle is inscribed in it. The lengths of the sides containing the right angle are 6 cm and 8 cm.
Find the radius of the circle.

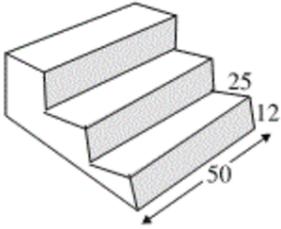


- (3) A building has 8 right cylindrical pillares whose cross sectional diameter is 1 m and whose height is 4.2 m. Find the expenditure to paint these pillars at the rate of Rs. 24 per m^2 .

Q.5 Solve any two sub-questions:

(10)

- (1) Through the midpoint M of the side CD of parallelogram ABCD, the line BM is drawn intersecting AC in L and AD produced in E. Prove that $EL = 2BL$.
- (2) There are 3 stair-steps as shown in the figure. Each stair-step has width 25 cm, height 12 cm and length 50 cm. how many bricks have been used in it if each brick is 12.5cm x 6.25cm x 4cm?



- (3) In $\triangle PQR$, $\angle Q = 90^\circ$, seg QM is the median. $PQ^2 + QR^2 = 169$. Draw a circumcircle of $\triangle PQR$.