

L^AT_EX Assignment

1. The hour-hand of a clock is 6 cm long. The angle swept by it between 7:20 a.m. and 7:55 a.m. is:
 - (a) $(\frac{35}{4})^\circ$
 - (b) $(\frac{35}{2})^\circ$
 - (c) 35°
 - (d) 70°
2. In the given figure, $AB \parallel PQ$. If $AB = 6$ cm, $PQ = 2$ cm and $OB = 3$ cm, then the length of OP is:

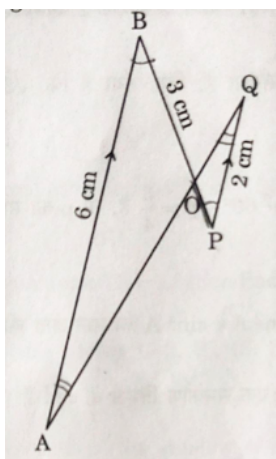


Figure 1:

- (a) 9cm
 - (b) 3cm
 - (c) 4cm
 - (d) 1cm
3. The length of the shadow of a tower on the plane ground is $\sqrt{3}$ times the height of the tower. Find the angle of elevation of the sun.
4. The angle of elevation of the top of a tower from a point on the ground which is 30 m away from the foot of the tower, is 30° . Find the height of the tower.
5. A car has two wipers which do not overlap. Each wiper has a blade of length 21 cm sweeping through an angle of 120° . Find the total area cleaned at each sweep of the two blades.

6. As observed from the top of a 75 m high lighthouse from the sea-level, the angles of depression of two ships are 30° and 60° . If one ship is exactly behind the other on the same side of the lighthouse, find the distance between two ships. (Use $\sqrt{3} = 1.73$)
7. From a point on the ground, the angle of elevation of the bottom and top of a transmission tower fixed at the top of 30 m high building are 30° and 60° , respectively. Find the height of the transmission tower. (Use $\sqrt{3} = 1.73$)
8. Sides AB and BC and median AD of a triangle ABC are respectively proportional to sides PQ and QR and median PM of $\triangle PQR$. Show that $\triangle ABC \sim \triangle PQR$.
9. Through the mid-point M of the side CD of a parallelogram $ABCD$, the line BM is drawn intersecting AC in L and AD (produced) in E . Prove that $EL = 2BL$.
10. In an annual day function of a school, the organizers wanted to give a cash prize along with a memento to their best students. Each memento is made as shown in the figure and its base $ABCD$ is shown from the front side. The rate of silver plating is ₹ 20 per cm^2 .

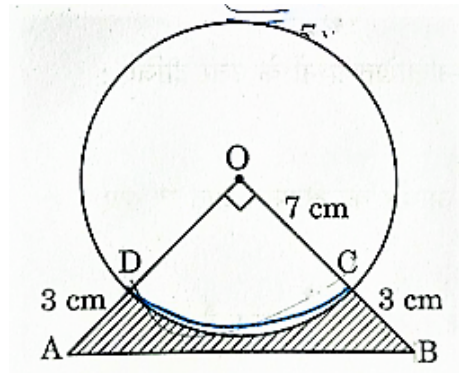


Figure 2: memento

Based on the above, answer the following questions:

- (i) What is the area of the quadrant $ODCO$?
- (ii) Find the area of $\triangle AOB$.
- (iii) What is the total cost of silver plating the shaded part $ABCD$?
- (iv) what is the length of arc CD ?