LaTeX 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=6cm,PQ=2 cm and OB=3cm,then the length of OP is:

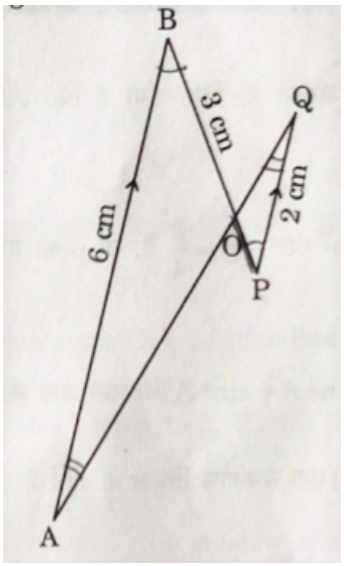

Figure 1:

   A. 9cm B. 3cm C. 4cm D. 1cm

3. (a) 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.

   OR

   (b) 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.

4. 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.

5. (a) As observed from the top of a 75 m high lighthouse from the sea-level,the angles of depression of two ships are $30^\circ$and 60°.If one ship is exactly behind the other on the same side of the lighthouse,find the distance between two ships.
   (Use $\sqrt{3} = 1.73$)

   OR

   (b) 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 $30^\circ$and 60°,respectively.Find the height of the transmission tower.(Use $\sqrt{3} = 1.73$)

6. (a) Sides AB and BC and median AD of a triangle ABC are respectively proportional to sides PQ and QR and median PM of ΔPQR. Show that $\Delta ABC \sim \delta PQR$.

OR

(b) Through the mid point M of the CD of a parallelogram ABCD,the line BM is drawn intersecting AC in L and AD(produced) in E.Prove that EL=2BL.

7. In an annual day function of a school,the organizers wanted to give a cash prize along with a momento to their best students. Each momento 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.

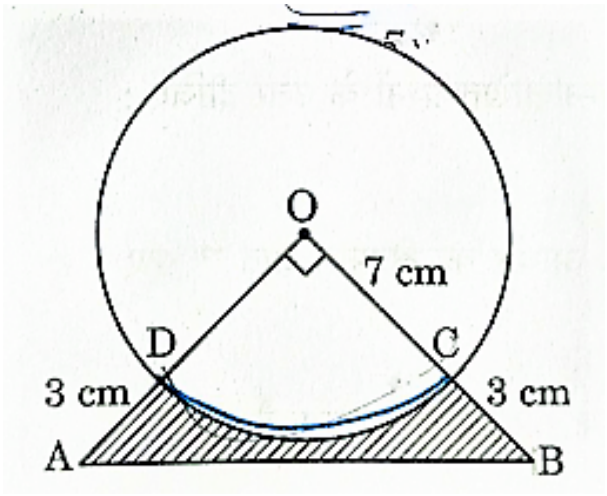

Figure 2:

Based on the above, answer the following questions:

(a) What is the area of the quadrant ODCO?

(b) Find the area of Δ AOB.

(c) i. What is the total cost of silver plating the shaded part ABCD?

OR

ii. what is the length of arc CD?