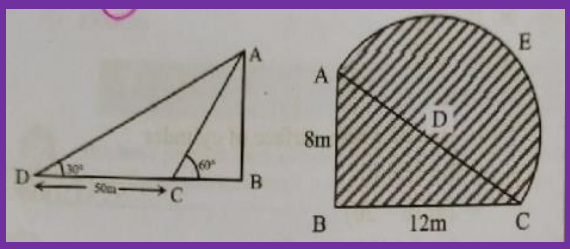
Cosmo School

Work Sheet – 06 (Mathematics)
for class – Nine (18.10.2020)
Chapter- Sixteen, Exercise - 16.3
Mensuration

Creative Questions:

1.



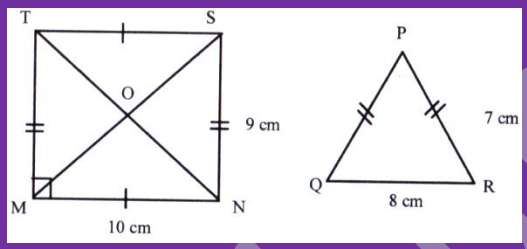
[C.B.- 20]

a) If $\sin 3\theta = \cos 3\theta$ then find the value of θ.

b) Find the value of AB in the figure – 1.

c) Determine the area of dark marked region in the figure – 2.

2.



[B.B.- 19]

a) Find the length of OS.

b) Find the ratio of the area of whole surface of the solid formed by revolving the quadrilateral MNST around its greater side and the area of the rectangle.

c) If area of APQR is equal to area of a circle then find the circumference of the circle.

3. **There is a road surrounding a circular field. The outer circumference of the road is 22 metres larger than the inner circumference. The cost to set up bricks on the road is Tk. 300 per square metre. [D.B.- 17]**

a) Determine the circumference of the circle of diameter 14 metres.

b) Find out the width of the road in metre.

c) Determine the cost to set up bricks on the road if the radius of the field is 35 metres.

4. **The perimeter of a circle is 44 metre. [S.B.- 17]**

a) Find the radius of the circle.

b) Find the length of a side of inscribed square of the circle.

c) If the perimeter of the circle is equal to the perimeter of an equilateral triangle then find the ratio of their areas.

5. **The area of a rectangular region is 1050 square metre. If the length is reduced by 5 metre it becomes a square region. [S.B.- 16]**

a) Form two equations considering x as length and y as breadth.

b) Find the length and breadth of the rectangular region.

c) Find the area of the unoccupied part of the circumcircle of the rectangle.

6. **The length and breadth of a circular rectangle are 12 metre and 5 metre respectively. The places in the circle which are not occupied by the rectangle are planted with grass. [R.B.- 16]**

a) Draw a figure in light of above information.

b) Determine the perimeter of the circular region.

c) Find the total cost for grass plantation if grass plantation cost per square metre is Tk. 50.

7. **The diameter of a circular garden is 300 metre. There is a 5 metres wide road outside the boundary of the circular garden. For carpeting the road, it costs Tk. 100 per square**

Mithun Kumar

metre and it costs Tk. 7.50 per metre for fencing. [C.B.- 16]

a) Draw a proportional figure based on the given information and find out the radius of the garden.
b) Find the area of the garden and the road.
c) What will be the cost for carpeting the road? What will be the cost of fencing around a square field whose area is equal to the area of the road?

8. Circumference of a circle is 440 metre. In the area excluding the inscribed square in it trees will be plant.

a) Draw a figure with a short description according to the information above.
b) Find the amount of taka if Tk. 40 per meter when erect by rope two times of square in it.
c) How much money will be spent in planting trees at the rate of Tk. 100 per square metre?

9. The circumference of a circle is equal to the perimeter of an equilateral triangle. Circumference of the circle is 440 metre.

a) Determine the surface area of cylinder whose radius 3 cm and length 10 cm.
b) Determine whole surface area and volume of a cube whose side is equal to the side of a square inscribed in the circle.
c) Prove that, the ratios of the areas of circle triangle is $3\sqrt{3} : \pi$.

Mithun Kumar