

FlexiPrep: Downloaded from flexiprep.com [https://www.flexiprep.com/]

For solved question bank visit [doorsteptutor.com \[https://www.doorsteptutor.com\]](https://www.doorsteptutor.com) and for free video lectures visit [Examrace YouTube Channel \[https://youtube.com/c/Examrace/\]](https://youtube.com/c/Examrace/)

CBSE Class 10- Mathematics: Chapter – 12 Areas Related to Circles Part 13

Get unlimited access to the best preparation resource for CBSE/Class-10 : [get questions, notes, tests, video lectures and more \[https://www.doorsteptutor.com/Exams/CBSE/Class-10/\]](https://www.doorsteptutor.com/Exams/CBSE/Class-10/) - for all subjects of CBSE/Class-10.

Question 38:

The cost of fencing a circular field at the rate of ₹.24 per meter is ₹.5280 . The field is to be ploughed at the rate of ₹.0.50 perm^2 . Find the cost of ploughing the field.

$$\left(\text{Take } r = \frac{22}{7} \right)$$

Answer:

Since for ₹.24 , the length of fencing = 1 metre

for ₹.5280 , the length fencing

$$= \frac{1}{24} \times 5280 = 220 \text{ meters}$$

Perimeter i.e., circumference of the field = 220 meters

Let r be the radius of the field

$$\therefore 2\pi r = 220$$

$$\Rightarrow r = \frac{220 \times 7}{2 \times 22} = 35 \text{ m}$$

Area of the field = $\pi r^2 = \pi(35)^2 = 1225\pi \text{ m}^2$

$$\text{Rate} = ₹.0.50 \text{ perm}^2$$

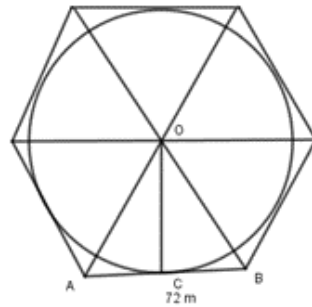
Total cost of ploughing the field = ₹

$$(1225\pi \times 0.50) = ₹. \frac{1225 \times 22 \times 1}{7 \times 2}$$

$$= ₹.(175 \times 11) = ₹.1925$$

Question 39:

Find the difference between the area of regular hexagonal plot each of whose side 72 m and the area of the circular swimming take in scribed in it. (Take $r = \frac{22}{7}$)



Answer:

Side of hexagonal plot = 72m Area of equilateral triangle

$$OAB = \frac{\sqrt{3}}{4}(\text{side})^2 = \frac{\sqrt{3}}{4}(72)^2 = 1296\sqrt{3}m^2$$

Area of hexagonal plot = 6 × Area of triangle OAB

$$= 6 \times 1296\sqrt{3} = 7776(1.732)$$

$$= 13468.032m^2$$

$$OC^2 = OA^2 - AC^2 = (72)^2 - \left(\frac{72}{2}\right)^2$$

$$= 5184 - 1296 = 3888$$

$$OC^2 = 3888$$

$$\Rightarrow OC = \sqrt{3888} = 62m$$

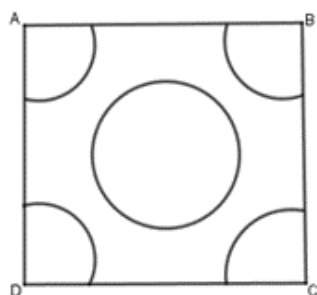
Area of circular region

$$\pi r^2 = \frac{22}{7} \times (62)^2 = 12081m^2$$

$$\text{Difference} = 13468m^2 - 12081m^2 = 1385m^2$$

Question 40:

In the given figure areas have been drawn of radius 21cm each with vertices A, B, C and D of quadrilateral ABCD as centers. Find the area of the shaded region.



Answer:

Required area = Area of the circle with radius 21

$$= \pi(21)^2$$

$$= \frac{22}{7} \times 21 \times 21$$

$$= 22 \times 63 = 1386 \text{ cm}^2$$