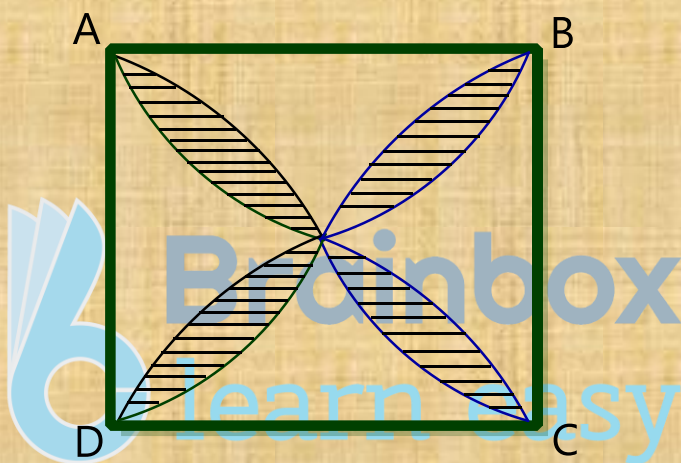


CHAPTER 09

Area of Plane Figures

Example:

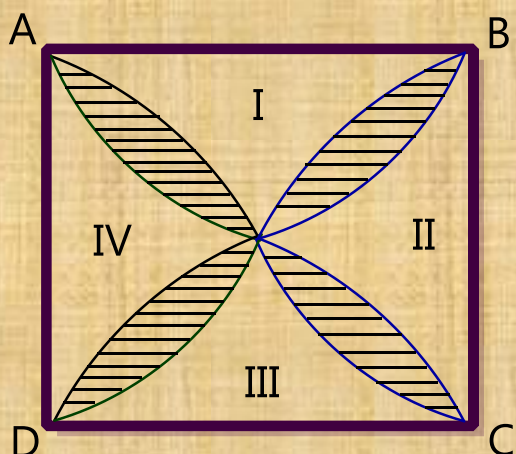
Find the area of the shaded region given in the figure where ABCD is a square of side 10 cm and semicircles are drawn with each side of the square as diameter. (Use $\pi = 3.14$)



Sol.

Let us mark the four unshaded regions as,

I, II, III and IV (See figure),



Area of I + Area of III

= Area of ABCD – Area of two semicircles each of radius 5cm

$$= (10 \times 10) - \left(2 \times \frac{1}{2} \times \pi \times 5^2 \right)$$

$$= 100 - 3.14 \times 25$$

$$= 100 - 78.5$$

$$= 21.5 \text{ cm}^2$$

Similarly, Area of II + Area of IV = 21.5 cm^2

Area of the shaded design

$$= (\text{Area of ABCD}) - (\text{Area of I} + \text{II} + \text{III} + \text{IV})$$

$$= (10 \times 10) - (21.5 + 21.5)$$

$$= 100 - 43$$

Area of the shaded design = 57 cm^2

