## Areas Related to Circles Ex 15.4 Q4

**Answer :**

It is given that, the quadrants of radius $r$ have been cut from the four corners of a rectangular piece is of length $l = 20$ m and width $w = 15$ m.

We have to find the area of remaining part.

We know that,

$$\text{Area of rectangle} = l \times w$$
$$= 20 \times 15$$
$$= 300 \text{ m}^2$$

$$\text{Area of quadrant} = \frac{1}{4}\pi r^2$$
$$= \frac{1}{4} \times \frac{22}{7} \times 3.5 \times 3.5$$
$$= 9.625 \text{ m}^2$$

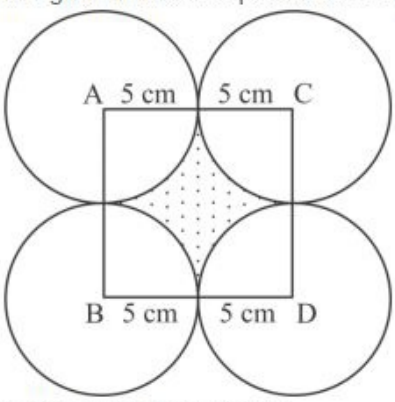
Now,

$$\text{Area of remaining part} = \text{Area of rectangle} - 4 \times \text{Area of quadrant}$$
$$= 300 - 4 \times 9.625$$
$$= 300 - 38.5$$
$$= \boxed{261.5 \text{ m}^2}$$

## Areas Related to Circles Ex 15.4 Q5

**Answer :**

It is given that four equal circle touches each other as shown in figure.




Let the side of square is $a$.

$$a = 5 + 5$$
$$= 10 \text{ cm}$$

$$\text{Area of square} = a^2$$
$$= 10 \times 10$$
$$= 100 \text{ cm}^2$$

We know that

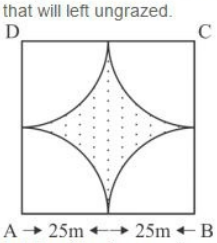
$$\text{Area of circle of radius } r = \pi r^2$$
$$= 3.14 \times 5 \times 5$$
$$= 78.5 \text{ cm}^2$$

$$\text{Area of quadrant inside square} = \frac{1}{4}\pi r^2$$
$$= \frac{1}{4} \times 78.5 \text{ m}^2$$
$$\text{Area of shaded region} = \text{Area of square} - 4 \times \text{Area of quadrant}$$
$$= 100 - 4 \times \frac{1}{4} \times 78.5$$
$$= 100 - 78.5$$
$$= \boxed{21.5 \text{ m}^2}$$

Areas Related to Circles Ex 15.4 Q6

**Answer :**

It is given that four cows are tethered at four corner of square ABCD. We have to find the area of plot that will left ungrazed.




Let the side of square is $a$.

$$a = 25 + 25$$
$$= 50 \text{ cm}$$
$$\text{Area of square} = a^2$$
$$= 50 \times 50$$
$$= 2500 \text{ cm}^2$$

$$\text{Area of quadrant inside square} = \frac{1}{4}\pi r^2$$
$$= \frac{1}{4} \times \frac{22}{7} \times 25 \times 25$$
$$= 491.07 \text{ m}^2$$
$$\text{Area of shaded region} = \text{Area of square} - 4 \times \text{Area of quadrant}$$
$$= 2500 - 4 \times 491.07$$
$$= 2500 - 1964.28$$
$$= \boxed{535.71 \text{ m}^2}$$

********** END **********