

## Areas Related to Circles Ex 15.4 Q7

#### Answer:

It is given that the circumference C of circular track is 352 m. We know that the circumference of circle of radius r is

$$C = 2\pi r$$

Substituting the value of C,

$$352 = 2 \times \frac{22}{7} \times r$$

$$352 \times 7 = 44r$$

$$r = \frac{352 \times 7}{44}$$

$$r = 56 \text{ m}$$

Thus, the radius of Circular Park is  $56\ m$  .

Since, 7m wide road surrounds the circular park. Then

radius of outer circle = radius of inner circle + 7

$$= 56 + 7$$

$$= 63 \text{ m}$$

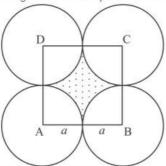
Area of road = Area of outer circle-Area of inner circle

$$= \frac{22}{7} \times 63 \times 63 - \frac{22}{7} \times 56 \times 56$$
$$= 12474 - 9856$$
$$= 2618 \text{ m}^2$$

Areas Related to Circles Ex 15.4 Q8

#### Answer:

It is given that four equal circles of radius a touches each other.



# So, Area of circle = $\pi a^2$

Since circles touches each other, the lines joining their centre make a square ABCD. The side of square is 2a.

Area of quadrant inside square =  $\frac{1}{4}\pi a^2$ 

Area of shaded region = Area of square  $-4 \times$  Area of quadrant

$$= (2a)^{2} - 4 \times \frac{\pi a^{2}}{4}$$

$$= 4a^{2} - \frac{22}{7}a^{2}$$

$$= \frac{6}{7}a^{2}$$

# Areas Related to Circles Ex 15.4 Q9

### Answer:

It is given that the side of square a = 40 m

Since four semicircular grassy plots rounds a square water tank. Then, diameter of semicircular plot is 2r=a .

So, the radius of semicircle

$$r = \frac{a}{2}$$
$$= \frac{40}{2}$$
$$= 20 \text{ m}$$

Area of semicircular plot = 
$$\frac{1}{2}\pi r^2$$
  
=  $\frac{1}{2} \times 3.14 \times 20 \times 20$   
=  $628 \text{ m}^2$ 

Now, the total area of plot is sum of area of four semicircular plots.

Total Area of plot =  $4 \times$  Area of semicircle

$$= 4 \times 628 \text{ m}^2$$
  
= 2512 m<sup>2</sup>

Since, The cost of turfing the plot per square meter =  $Rs\ 1.25$ 

So, The cost of turfing 2512 square meter plot = Rs  $1.25 \times 2512$ 

= Rs 3140/-

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