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Abhyas Maths

- ① Square have 4 equal sides
so length of each side of square
~~= 120~~ $= 120 \div 4 = 30$
∴ length of each side = 30

② $L = 6 \text{ m}$
 $W = 4.5 \text{ m}$

Area of carpet
 \Rightarrow length \times breadth
 $= 6 \times 4.5$
 $= 27 \text{ m}^2$

Cost price of carpet

\Rightarrow Area \times rate

$\rightarrow 27 \times 45$

$= 1215 \rightarrow$ cost of carpet

③ length of wire = perimeter of $\Delta = 3 \times 4.4$
 $= 13.2 \text{ cm}$

Circumference of Circle = length of wire

$2\pi r = 13.2$

$r = 13.2 \times 7 \div 2 \times 22$

$r = 2.1$

Area of circle = $2\pi r = 22 \div 7 \times (2.1)^2 = 13.86 \text{ cm}^2$

④ The ratio of Radii of 2 wheels is 3:2
 $3x$

$2x$

Ratio of Circumference = $3 \div 2$
 $= 1.5 \rightarrow$ is Circumference

⑤ Radius of wheel in cm = 63 cm

Radius of wheel in m = ~~100+63~~ $63 \div 100$
 $= 0.63$

Circumference of wheel $2 \times \pi \times \text{radius}$

$$= 2 \times 22 \div 7 \times 63 \div 100$$

$$44 \times 9 \div 100$$

$$11 \times 9 \div 25$$

$$99 \div 25$$

$$\text{Distance} = 1540$$

$$\text{Total turns to cover } 1540 \text{ m} = 1540 \div (99/25)$$

$$= 38,500 \text{ m} \div 99$$

$$= 388 \text{ turns}$$

⑥ Area of tiles = $12 \times 10 = 12 \text{ cm}^2$

$$\text{Area of the lane} = 240 \times 12 = 2880 \text{ m}^2$$

$$2880 \times 10000 = 28800000 \text{ cm}^2$$

No of Tiles req - $\frac{\text{Area of lane}}{\text{Area of tiles}}$

$$\text{Area of tile} = 28800000 \div 12 = 24,00,000 \text{ tiles}$$

Required.

$$\text{⑦ Area of garden} = \text{Area of square plot} - \text{Area of house}$$

$$\text{Side of square plot} = 25 \text{ m}$$

$$\text{Area of square plot} = \text{side} \times \text{side}$$

$$25 \times 25$$

$$25 \div \text{time } 25$$

$$= 625 \div \text{m}^2$$

$$\text{Area of house} = \text{L} \div \text{time b}$$

$$\text{length} = 20 \text{ m}$$

$$\text{breadth} = 15 \text{ m}$$

$$\text{Area of house} = 20 \div \text{time } 15$$

$$= 300 \div \text{m}^2$$

$$\text{Area of garden} = 625 \div \text{m}^2 - 300 \div \text{m}^2$$

$$= 325 \div \text{m}^2$$

$$\text{Cost of developing garden} = \text{Rs} \div 55 \div$$

$$\text{Time } 325 \div \text{m}^2$$

$$= 17,875$$

Let the length of 1 parallel side be x cm
 The length of other parallel side will be $= (x+6)$ cm
 Area of trapezium $= \frac{1}{2} \times 9 \times (x+x+6)$

$$= 180 = \frac{1}{2} \times 9 \times (2x+6)$$

$$= 360 = 18x + 54$$

$$= 18x = 360 - 54 = 306$$

$$x = 17 \text{ cm}$$

$$= x+6 = 17+6 = 23 \text{ cm}$$

\therefore The 2 parallel side are 17 cm and 23 cm.

Radius of semi circle $= r = \frac{D}{2}$
 $= \frac{7}{2}$

$$= 3.5 \text{ cm}$$

$$\text{Length of Rect} = 20 - r - r$$

$$= 20 - 3.5 - 3.5$$

$$= 20 - (3.5 + 3.5)$$

$$= 20 - 7$$

$$= 13 \text{ m}$$

$$B \text{ of Rect} = 7 \text{ m}$$

Area of semi circle

$$A = \frac{1}{2} \pi r^2$$

Putting $r = 3.5$

$$A = \frac{1}{2} \pi \left(\frac{7}{2}\right)^2$$

$$= \frac{1}{2} \times \frac{22}{7} \times \frac{7}{2} \times \frac{7}{2}$$

$$= 11 \times \frac{1}{2} \times \frac{7}{2}$$

$$= \frac{77}{2}$$

Area of Rectangle

$$\text{Area} = l \times b$$

Putting $l = 13\text{m}$ and $b = 7\text{m}$

$$\text{Area} = 13 \times 7$$

$$= 91\text{m}^2$$

Area of garden = 2 × Area of semi circle +

Area of rectangle

$$= 2 \times \frac{77}{2} + 91$$

$$= 77 + 91$$

$$= 38.5 + 91$$

$$= 129.5\text{m}^2$$

① Perimeter of garden = 2x circumference of semi circle + 2x L of Rectangle

$$\text{Circumference of semicircle} = \frac{1}{2} \times 2\pi r$$

$$= \frac{1}{2} \times 2 \times \frac{22}{7} \times \frac{7}{2}$$

$$= 11 \text{ m}$$

Perimeter of garden = 2x circumference of Semi circle

$$= 2 \times 11 + 2 \times 13$$

$$= 22 + 26$$

$$= 48 \text{ m}$$

$$\text{Area} = 124.5 \text{ m}^2$$

$$\text{Perimeter} = 48 \text{ m}$$