



Surface Areas and Volume of a Cuboid and Cube Ex 18.2 Q8

Answer :

River is flowing at the speed of,

$$2 \text{ km/h} = 2000 \text{ m}/60 \text{ min}$$

$$= \frac{100}{3} \text{ m/min}$$

Width of the river (b) = 40 m

Depth of the river (h) = 3 m

We need to find the water flowed in one minute

So, in one minute, the river covers the distance (say, l) of $\frac{100}{3}$ m .

Quantity of water that will fall into the sea in one minute,

$$V = lbh$$

$$= \left(\frac{100}{3} \right) (40) (3)$$

$$= 4000 \text{ m}^3$$

$$= 4000 \text{ kilolitre}$$

$$= 40,00,000 \text{ litre}$$

So, in one minute 40,00,000 litres of water will fall into the sea.

Surface Areas and Volume of a Cuboid and Cube Ex 18.2 Q9

Answer :

We are given;

Velocity of the water

$$= 100 \text{ km/h}$$

$$= 100 \text{ km}/60 \text{ min}$$

$$= 50 \text{ km}/30 \text{ min}$$

$$= 50,000 \text{ m}/30 \text{ min}$$

$$= 5,00,000 \text{ dm}/30 \text{ min}$$

So, in 30 min, it will go the distance (say, l) 5,00,000 dm.

Width of the canal (b) = 30 dm

Depth of the canal (h) = 12 dm

In 30 min, quantity of water flown,

$$= lbh$$

$$= 5,00,000 \times 30 \times 12$$

$$= 30 \times 12 \times 5 \times 10^5 \text{ dm}^3$$

If 8 cm of standing water is desired, then the area that will be irrigated,

$$= \frac{(lbh) \text{ dm}^3}{8 \text{ cm}}$$

$$= \frac{30 \times 12 \times 5 \times 10^5 \text{ dm}^3}{0.8 \text{ dm}}$$

$$= 45 \times 5 \times 10^6 \text{ dm}^2$$

$$= 45 \times 5 \times 10^4 \text{ m}^2$$

$$= 22,50,000 \text{ m}^2$$

In 30 min, it will irrigate the area of $\boxed{22,50,000 \text{ m}^2}$.

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