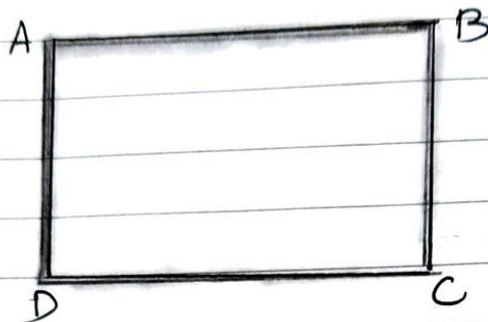
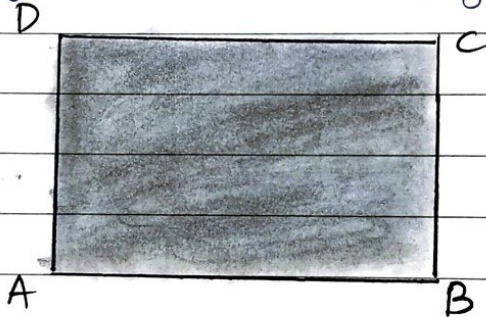


Perimeter:- Total distance around the boundary of a closed figure.

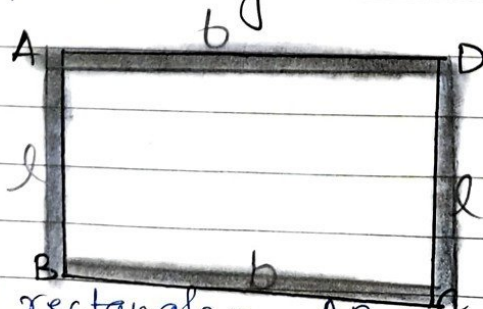


$$P = AB + BC + CD + DA$$

Area:- Amount of surface enclosed by a closed figure.



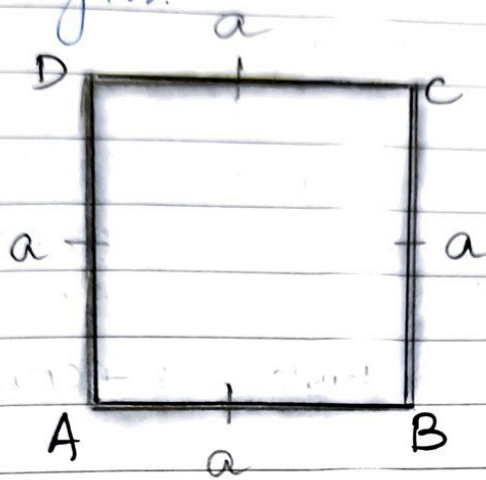
Perimeter of rectangle:-



$$\begin{aligned} \text{Perimeter of rectangle} &= AB + BC + CD + DA \\ &= l + b + l + b \\ &= 2l + 2b = 2(l + b) \end{aligned}$$

Area of rectangle = $l \times b$

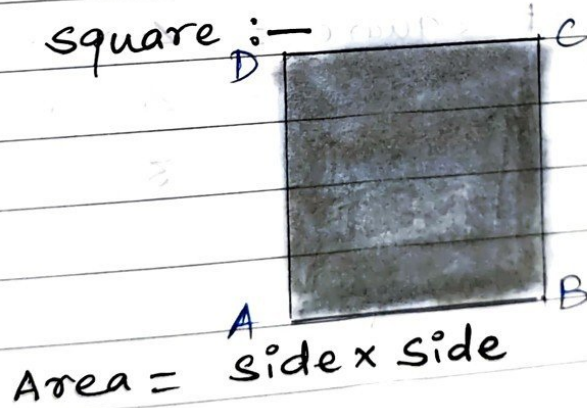
Square:- It has all its four sides of equal length.



$$\begin{aligned} \text{Perimeter} &= AB + BC + CD + DA \\ &= a + a + a + a \end{aligned}$$

$$\text{Perimeter} = 4 \times \text{side}$$

Area of square :-



$$\text{Area} = \text{side} \times \text{side}$$

Checkpoint 15A

Q.1. Find the perimeter of the following rectangle

(a) length = 15 cm. breadth = 12 cm.

Sol:-

Given that

$$\text{length} = 15 \text{ cm}$$

$$\text{breadth} = 12 \text{ cm.}$$

Area of

$$\text{Perimeter of rectangle} = 2(l+b)$$

$$= 2(15+12)$$

$$= 2 \times 27$$

$$\text{Perimeter of rectangle} = 54 \text{ cm.}$$

Q.2. Find the perimeter of the square whose sides are 9 cm.

Sol:-

Given that

$$\text{sides of square} = 9 \text{ cm.}$$

$$\text{Perimeter of square} = 4 \times \text{side}$$

$$= 4 \times 9$$

$$\text{Perimeter of square} = 36$$

Qus-3 Find the side of each square whose perimeter is 28 cm.

Sol:-

Given that

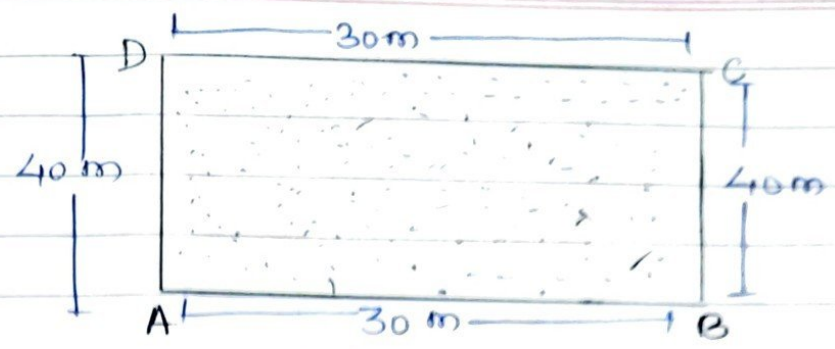
$$\text{Perimeter of square} = 28 \text{ cm.}$$

$$4 \times \text{side} = 28$$

$$\text{side} = \frac{28}{4}$$

$$\text{side} = 7 \text{ cm.}$$

Hence, side of square is 7 cm. Ans



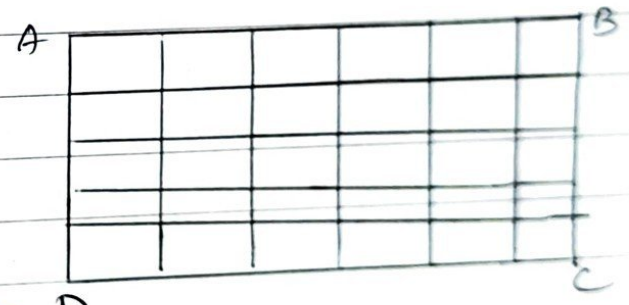
Cost of mowing sq. Per meter is ₹ 6

$$\begin{aligned} \text{Cost of } 1200 \text{ sq. meter} &= 1200 \times 6 \\ &= ₹ 7200 \end{aligned}$$

Hence, cost of rectangular lawn is ₹ 7200

Ques. A Hall is rectangular in shape of length 25 m and breadth 18 m. Its floor needs to be paved with square tiles of 25 cm. How many such tiles are required to cover the floor of the hall?

$$\begin{aligned} \text{Hall (length)} &= 25 \text{ m} \\ \text{(breadth)} &= 18 \text{ m} \\ \text{Area of Hall} &= l \times b \\ &= 25 \times 18 \\ &= 450 \text{ sq. m.} \end{aligned}$$



$$\begin{aligned} \text{Side of sq. tiles} &= 25 \text{ cm} \\ \text{Area} &= \text{side} \times \text{side} \\ &= 25 \times 25 \\ &= 625 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} \text{required tiles} &= \frac{\text{Area of rectangle}}{\text{Area of square}} \\ &= \frac{1800 \times 450 \times 100 \times 100 \text{ cm}}{625 \times 25} = 7200 \text{ tiles} \end{aligned}$$

Q.4 Find the area of rectangle whose dim. $140 \times 130 \text{ m}$

Given that

$$\text{length of rectangle} = 140 \text{ m}$$

$$\text{breadth} = 130 \text{ m}$$

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

$$= 140 \times 130$$

$$= 18200 \text{ square m.}$$

Q.5 Find the area of square whose perimeter is 170 cm

Given that

$$\text{Perimeter of square} = 170 \text{ cm.}$$

$$4 \times \text{side} = 170 \text{ cm}$$

$$\text{side} = \frac{170}{4}$$

$$\text{side} = 42.5 \text{ cm.}$$

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

$$= 42.5 \times 42.5$$

$$= 1806.25 \text{ sq. cm.}$$

Thus, Area of square is 1806.25 sq. m.

word problem based rectangle and square.

Daizy walks around a square park of side 30 m twice every morning. How much total distance does she walk every morning?

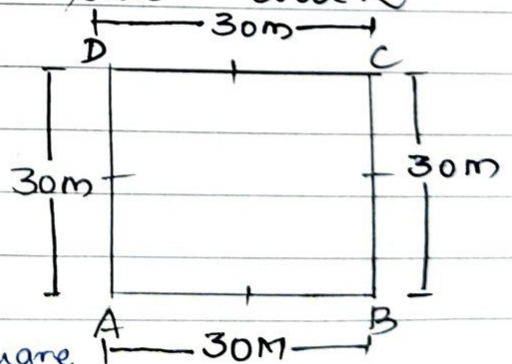
$$\text{Square park length} = 30 \text{ m}$$

$$\text{twice} = 2 \times 30$$

$$= 60 \text{ m}$$

$$\text{Total distance} = \text{Perimeter of square}$$

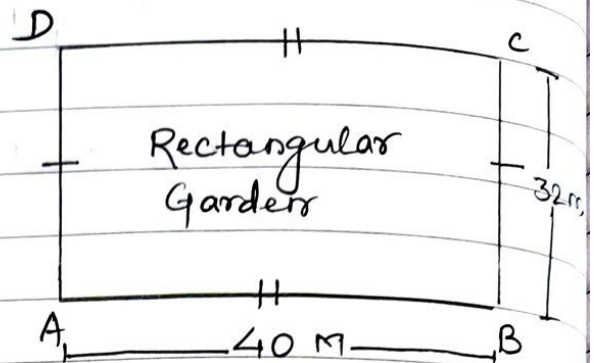
$$= 4 \times \text{side} = 4 \times 60 = 240 \text{ m. Ans}$$



Qus:- A rectangular garden is 40 m long and 32 m wide. Find the cost of fencing it once at the rate of ₹ 20/m.

Sol:-

Rectangular Garden
length = 40 m
breadth = 30 m.



$$\begin{aligned} \text{Perimeter} &= 2(l+b) \\ &= 2(40+30) \end{aligned}$$

$$\text{Perimeter} = 140 \text{ m}$$

Cost of fencing at the rate of meter = ₹ 20

$$\begin{aligned} \text{Cost of 140 meter} &= 140 \times 20 \\ &= ₹ 2800 \end{aligned}$$

Thus, cost of rectangular Garden is ₹ 2800

Area based

Qus:- Ram Singh is mowing a rectangular lawn dimensions 30 m by 40 m. Find the area of the lawn. Also, find the cost of mowing the whole lawn at the rate of ₹ 6 per square meter.

Sol:-

Rectangular lawn (length) = 30 M

breadth = 40 M

$$\text{Area of lawn} = \text{length} \times \text{breadth}$$

$$= 30 \times 40$$

$$= 1200 \text{ Square M.}$$

Q.4 A bucket holds 5.5 litres of water.
How many millilitres of water does it hold.

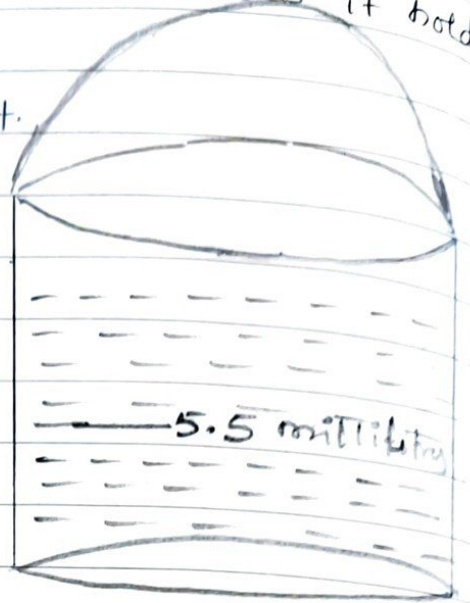
Sol:- Bucket holds water = 5.5 lit.

$$1 \text{ litres} = 1000 \text{ millilitres}$$

$$= 5.5 \times 1000$$

$$\text{Volume} = 5500.0 \text{ millilitres}$$

water holds water 5500 ml.



Q.5 A milkman delivers milk in a rectangular base can measuring $10 \text{ cm} \times 10 \text{ cm} \times 15 \text{ cm}$. Find its capacity in litres.

Sol:- Rectangular base measuring (l) = 10 cm
(b) = 10 cm
(h) = 15 cm.

$$\begin{aligned} \text{Capacity} &= l \times b \times h \\ &= 10 \times 10 \times 15 \\ &= 100 \times 15 \\ &= 1500 \text{ cubic meter} \\ &= \frac{1500}{1000} \text{ Litre} \\ &= 1.5 \text{ Litre Ans} \end{aligned}$$

Thus, capacity is 1.5 litre.

Q.6 Find the perimeter of triangle whose sides are 15 cm, 16 cm, and 19.5 cm.

Measurement box length = 24.5 cm
 breadth = 10 cm
 height = 5.5 cm.

$$\begin{aligned} \text{Greatest amount} &= \text{volume of cuboid} \\ &= l \times b \times h \\ &= 24.5 \times 10 \times 5.5 \\ &= 1347.5 \text{ cu. cm.} \end{aligned}$$

A carton 55 cm long, 30 cm broad and 20 cm high is filled with matchboxes of dimensions 6 cm x 4 cm x 2 cm. find how many matchboxes are there in the carton?

Carton dimensions (l) = 55 cm
 (b) = 30 cm
 (h) = 20 cm

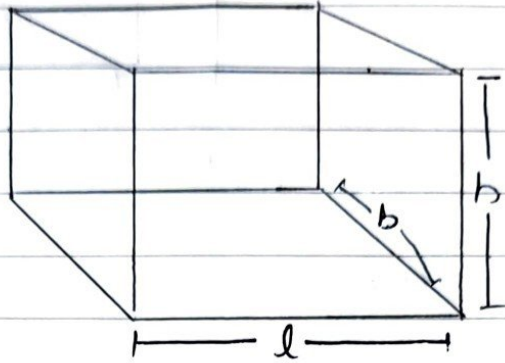
$$\begin{aligned} \text{Volume of carton} &= l \times b \times h \\ &= 55 \times 30 \times 20 \\ &= 1100 \times 30 \\ &= 33000 \text{ cu. cm.} \end{aligned}$$

Match box dimensions 6 cm x 4 cm x 2 cm

$$\begin{aligned} \text{Volume} &= l \times b \times h \\ &= 6 \times 4 \times 2 \\ &= 48 \text{ cu. cm} \end{aligned}$$

$$\begin{aligned} \text{required match box} &= \frac{\text{volume of carton}}{\text{volume of match box}} \\ &= \frac{33000}{48} \\ &= 687.5 \text{ (approx.)} \quad \text{Ans} \end{aligned}$$

Volume :- The volume of an object is the amount of space occupied by it.



1. Volume of cuboid = length \times breadth \times height
2. Volume of cube = side \times side \times side

Qus:-1 The length, breadth and height of a cuboid are 15 cm, 8 cm and 7 cm respectively, find its volume.

Sol:-

$$\text{Length of cuboid} = 15 \text{ cm}$$

$$\text{breadth} = 8 \text{ cm}$$

$$\text{height} = 7 \text{ cm}$$

$$\text{Volume of cuboid} = l \times b \times h$$

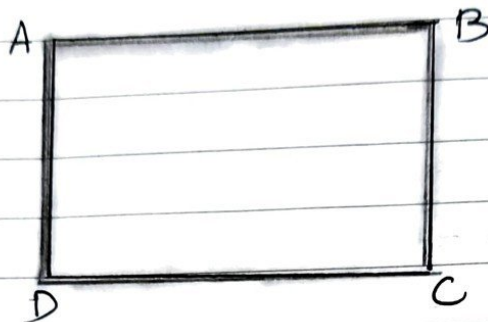
$$= 15 \times 8 \times 7$$

$$= 840 \text{ cubic cm.}$$

Thus, volume of the cuboid is 840 cu. cm.

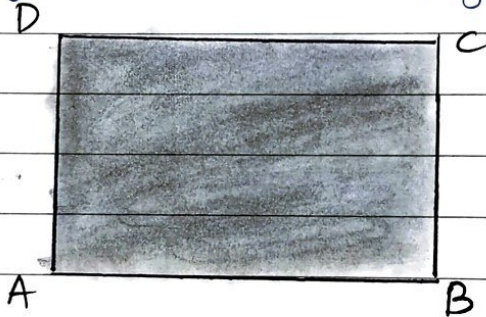
Q.2 Shagun bought a box full of oats. The box measures 24.5 cm \times 10 cm \times 5.5 cm what is the greatest amount of oats in cu. cm the box holds?

Perimeter:- Total distance around the boundary of a closed figure.

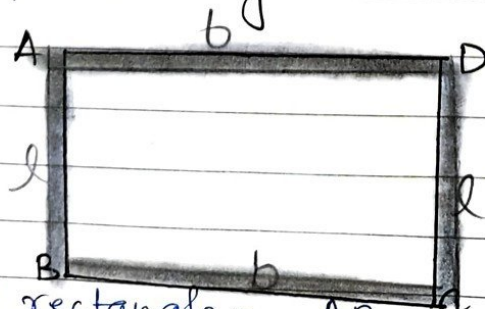


$$P = AB + BC + CD + DA$$

Area:- Amount of surface enclosed by a closed figure.



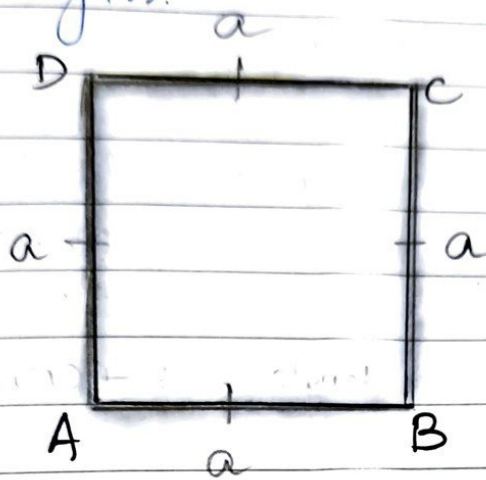
Perimeter of rectangle:-



$$\begin{aligned} \text{Perimeter of rectangle} &= AB + BC + CD + DA \\ &= l + b + l + b \\ &= 2l + 2b = 2(l + b) \end{aligned}$$

Area of rectangle = $l \times b$

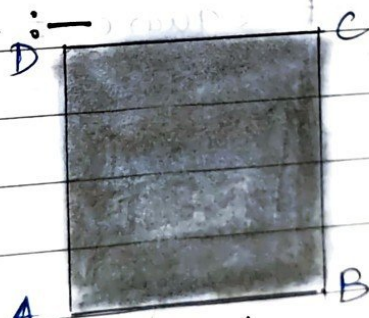
Square:- It has all its four sides of equal length.



$$\begin{aligned} \text{Perimeter} &= AB + BC + CD + DA \\ &= a + a + a + a \end{aligned}$$

$$\text{Perimeter} = 4 \times \text{side}$$

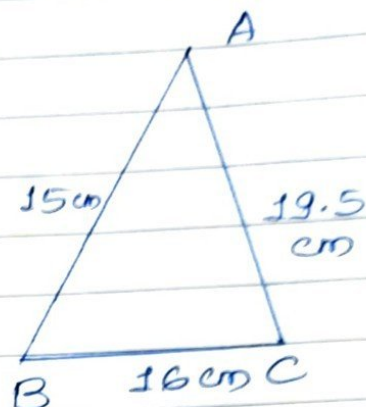
Area of square:-



$$\text{Area} = \text{side} \times \text{side}$$

Sol: → Triangle sides are 15 cm, 16 cm & 19.5 cm

$$\begin{aligned} \text{Perimeter} &= AB + BC + CA \\ &= (15 + 16 + 19.5) \text{ cm} \\ &= 50.5 \text{ cm.} \end{aligned}$$



Q.2 The perimeter of square frame is 16 m. find its (a) sides (b) area.

Sol: → Perimeter of square frame = 16 cm.

$$4 \times \text{side} = 16 \text{ cm}$$

$$\text{side} = \frac{16}{4}$$

$$\text{side} = 4 \text{ cm.}$$

$$\text{Area} = \text{side} \times \text{side}$$

$$= 4 \times 4 = 16 \text{ cm}^2 \quad \text{Ans}$$

Q.4 An eraser is 25 mm long and 20 mm wide. find its perimeter in cm and its area in sq. cm.

Sol: → Eraser length = 25 mm

breadth = 20 mm

$$\begin{aligned} \text{Perimeter} &= 2(l+b) \\ &= 2(25+20) \\ &= 2 \times 45 \\ &= 90 \text{ mm.} \end{aligned}$$

$$= \frac{90}{10} \text{ cm} = 9 \text{ cm.} \quad \text{Ans}$$

$$\text{Area} = l \times b = 25 \times 20 = \frac{500}{100} \text{ cm}^2 = 5 \text{ sq. cm.}$$

Q.4 Find the area of rectangle whose dim. $140 \times 130 \text{ m}$

Given that

$$\text{length of rectangle} = 140 \text{ m}$$

$$\text{breadth} = 130 \text{ m}$$

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

$$= 140 \times 130$$

$$= 18200 \text{ square m.}$$

Q.5 Find the area of square whose perimeter is 170 cm

Given that

$$\text{Perimeter of square} = 170 \text{ cm.}$$

$$4 \times \text{side} = 170 \text{ cm}$$

$$\text{side} = \frac{170}{4}$$

$$\text{side} = 42.5 \text{ cm.}$$

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

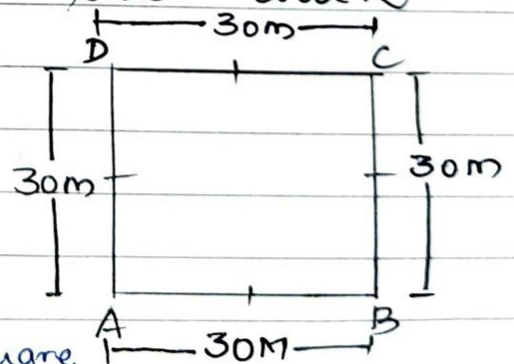
$$= 42.5 \times 42.5$$

$$= 1806.25 \text{ sq. cm.}$$

Thus, Area of square is 1806.25 sq. m.

word problem based rectangle and square.

Daizy walks around a square park of side 30 m twice every morning. How much total distance does she walk every morning?



$$\text{Square park length} = 30 \text{ m}$$

$$\text{twice} = 2 \times 30$$

$$= 60 \text{ m}$$

$$\text{Total distance} = \text{Perimeter of square}$$

$$= 4 \times \text{side} = 4 \times 60 = 240 \text{ m. Ans}$$

Checkpoint 15A

Q.1. Find the perimeter of the following rectangle

(a) length = 15 cm. breadth = 12 cm.

Sol:-

Given that

$$\text{length} = 15 \text{ cm}$$

$$\text{breadth} = 12 \text{ cm.}$$

Area of

$$\text{Perimeter of rectangle} = 2(l+b)$$

$$= 2(15+12)$$

$$= 2 \times 27$$

$$\text{Perimeter of rectangle} = 54 \text{ cm.}$$

Q.2. Find the perimeter of the square whose sides are 9 cm.

Sol:-

Given that

$$\text{sides of square} = 9 \text{ cm.}$$

$$\text{Perimeter of square} = 4 \times \text{side}$$

$$= 4 \times 9$$

$$\text{Perimeter of square} = 36$$

Qus-3 Find the side of each square whose perimeter is 28 cm.

Sol:-

Given that

$$\text{Perimeter of square} = 28 \text{ cm.}$$

$$4 \times \text{side} = 28$$

$$\text{side} = \frac{28}{4}$$

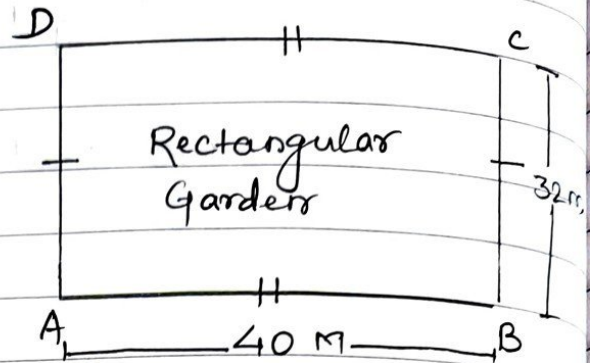
$$\text{side} = 7 \text{ cm.}$$

Hence, side of square is 7 cm. Ans

Qus:- A rectangular garden is 40 m long and 32 m wide. Find the cost of fencing it once at the rate of ₹ 20/m.

Sol:-

Rectangular Garden
length = 40 m
breadth = 30 m.



$$\begin{aligned} \text{Perimeter} &= 2(l+b) \\ &= 2(40+30) \end{aligned}$$

$$\text{Perimeter} = 140 \text{ m}$$

Cost of fencing at the rate of meter = ₹ 20

$$\begin{aligned} \text{Cost of 140 meter} &= 140 \times 20 \\ &= ₹ 2800 \end{aligned}$$

Thus, cost of rectangular Garden is ₹ 2800 Ans

Area based

Qus:- Ram Singh is mowing a rectangular lawn dimensions 30 m by 40 m. Find the area of the lawn. Also, find the cost of mowing the whole lawn at the rate of ₹ 6 per square meter.

Sol:-

Rectangular lawn (length) = 30 m

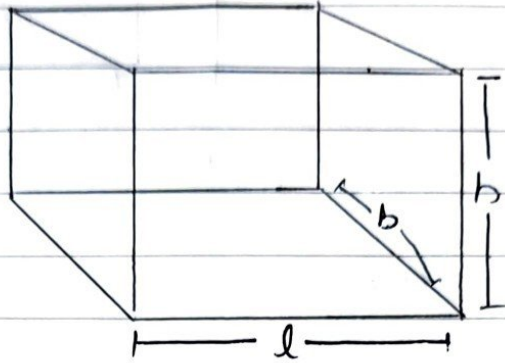
breadth = 40 m

$$\text{Area of lawn} = \text{length} \times \text{breadth}$$

$$= 30 \times 40$$

$$= 1200 \text{ Square M.}$$

Volume :- The volume of an object is the amount of space occupied by it.



1. Volume of cuboid = length \times breadth \times height
2. Volume of cube = side \times side \times side

Qus:-1 The length, breadth and height of a cuboid are 15 cm, 8 cm and 7 cm respectively, find its volume.

Sol:-

$$\text{Length of cuboid} = 15 \text{ cm}$$

$$\text{breadth} = 8 \text{ cm}$$

$$\text{height} = 7 \text{ cm}$$

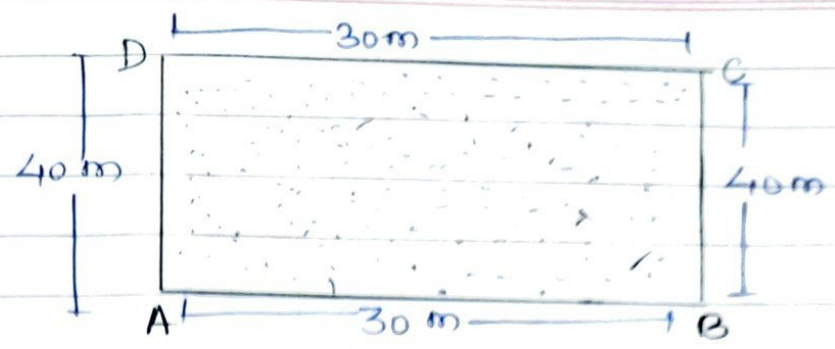
$$\text{Volume of cuboid} = l \times b \times h$$

$$= 15 \times 8 \times 7$$

$$= 840 \text{ cubic cm.}$$

Thus, volume of the cuboid is 840 cu. cm.

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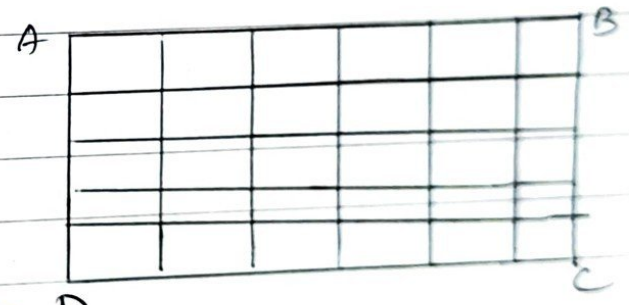
Cost of mowing sq. Per meter is ₹ 6

$$\begin{aligned} \text{Cost of } 1200 \text{ sq. meter} &= 1200 \times 6 \\ &= ₹ 7200 \end{aligned}$$

Hence, cost of rectangular lawn is ₹ 7200

Ques. A Hall is rectangular in shape of length 25 m and breadth 18 m. Its floor needs to be paved with square tiles of 25 cm. How many such tiles are required to cover the floor of the hall?

$$\begin{aligned} \text{Hall (length)} &= 25 \text{ m} \\ \text{(breadth)} &= 18 \text{ m} \\ \text{Area of Hall} &= l \times b \\ &= 25 \times 18 \\ &= 450 \text{ sq. m.} \end{aligned}$$



$$\begin{aligned} \text{Side of sq. tiles} &= 25 \text{ cm} \\ \text{Area} &= \text{side} \times \text{side} \\ &= 25 \times 25 \\ &= 625 \text{ cm}^2 \end{aligned}$$

$$\begin{aligned} \text{required tiles} &= \frac{\text{Area of rectangle}}{\text{Area of square}} \\ &= \frac{1800 \times 450 \times 100 \times 100 \text{ cm}}{625 \times 25} = 7200 \text{ tiles} \end{aligned}$$