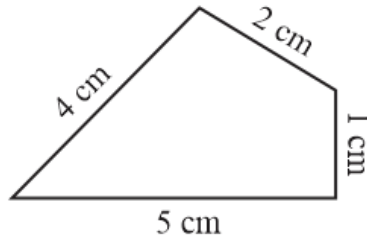


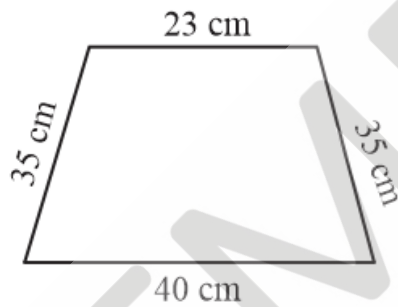
**CBSE NCERT Solutions for Class 6 Mathematics Chapter 10****Back of Chapter Questions****Exercise: 10.1:**

1. Find the perimeter of each of the following figures:

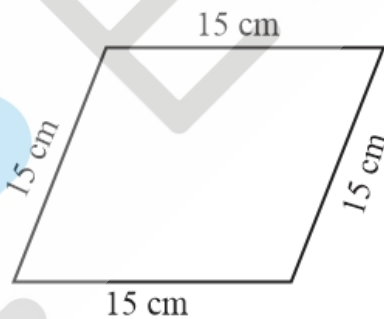
(A)



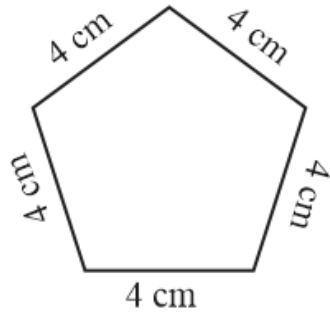
(B)



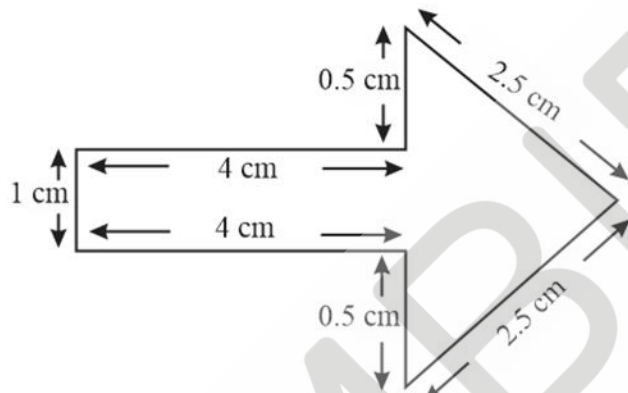
(C)



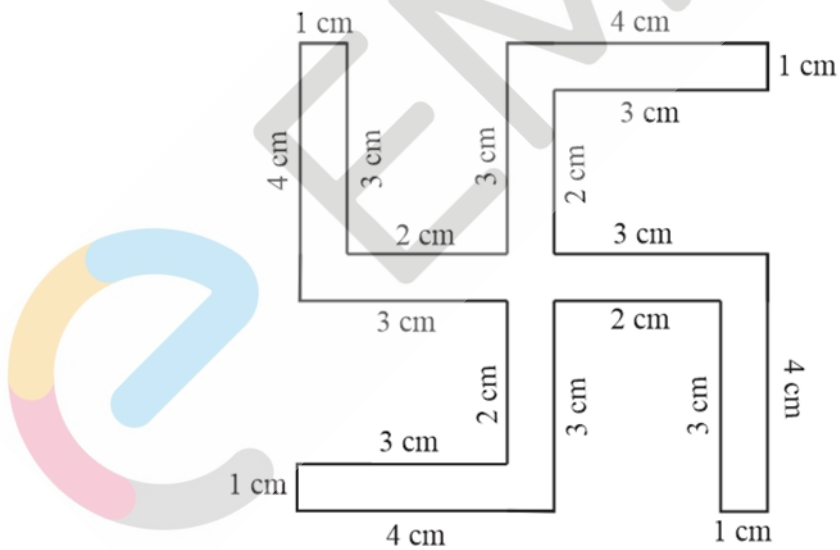
(D)



(E)



(F)

**Solution:**

We know that,

Perimeter = Sum of all the sides

$$= 4 \text{ cm} + 2 \text{ cm} + 1 \text{ cm} + 5 \text{ cm}$$

$$= 12 \text{ cm}$$

Hence, perimeter of the quadrilateral is 12 cm

We know that,

Perimeter = Sum of all the sides

$$= 23 \text{ cm} + 35 \text{ cm} + 40 \text{ cm} + 35 \text{ cm}$$

$$= 133 \text{ cm}$$

Hence, perimeter of the quadrilateral is 133 cm

We know that,

Perimeter = Sum of all the sides

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

$$= 60 \text{ cm}$$

Hence, perimeter of the parallelogram is 60 cm

We know that,

Perimeter = Sum of all the sides

$$= 4 \text{ cm} + 4 \text{ cm} + 4 \text{ cm} + 4 \text{ cm} + 4 \text{ cm}$$

$$= 20 \text{ cm}$$

Hence, perimeter of the regular pentagon is 20 cm

We know that,

Perimeter = Sum of all the sides

$$= 1 \text{ cm} + 4 \text{ cm} + 0.5 \text{ cm} + 2.5 \text{ cm} + 2.5 \text{ cm} + 0.5 \text{ cm} + 4 \text{ cm}$$

$$= 15 \text{ cm}$$

Hence, perimeter of the given figure is 15 cm

We know that,

Perimeter = Sum of all the sides

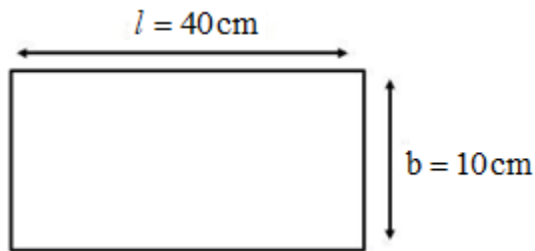
$$= 4 \text{ cm} + 1 \text{ cm} + 3 \text{ cm} + 2 \text{ cm} + 3 \text{ cm} + 4 \text{ cm} + 1 \text{ cm} + 3 \text{ cm} + 2 \text{ cm} + 3 \text{ cm} + 4 \text{ cm} + 1 \text{ cm} + 3 \text{ cm} + 2 \text{ cm} + 3 \text{ cm}$$

$$= 52 \text{ cm}$$

Hence, perimeter of the given figure is 52 cm

2. The lid of a rectangular box of sides 40 cm by 10 cm is sealed all round with tape. What is the length of the tape required?

**Solution:**



Given, length = 40 cm and breadth = 10 cm

Total length of tape required = Perimeter of rectangle

We know that, Perimeter of rectangle =  $2(\text{length} + \text{breadth})$

Total length of tape required =  $2(\text{length} + \text{breadth})$

$$= 2(40 + 10)$$

$$= 2 \times 50$$

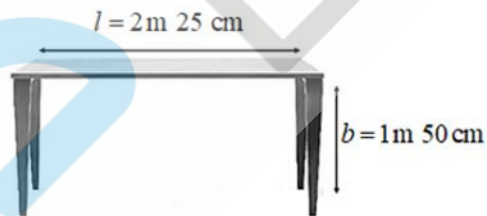
$$= 100 \text{ cm}$$

$$= 1 \text{ m}$$

Therefore, the total length of tape required is 100 cm or 1 m.

3. A table-top measures 2 m 25 cm by 1 m 50 cm. What is the perimeter of the table-top?

**Solution:**



Given,

$$\text{Length of table-top} = 2 \text{ m } 25 \text{ cm} = 2.25 \text{ m} \quad [\because 1 \text{ m} = 100 \text{ cm}]$$

$$\text{Breadth of table-top} = 1 \text{ m } 50 \text{ cm} = 1.50 \text{ m}$$

$$\text{Perimeter of table-top} = 2 \times (\text{length} + \text{breadth})$$

$$= 2 \times (2.25 + 1.50)$$

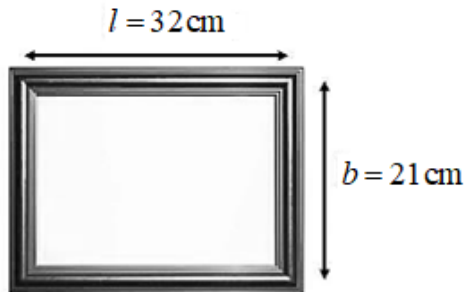
$$= 2 \times 3.75$$

$$= 7.50 \text{ m}$$

Hence, the perimeter of tabletop is 7.5 m.

4. What is the length of the wooden strip required to frame a photograph of length and breadth 32 cm and 21 cm respectively?

**Solution:**



Given, length = 32 cm and breadth = 21 cm

Length of wooden strip = perimeter of photograph

$$\therefore \text{Perimeter of photograph} = 2 \times (\text{length} + \text{breadth})$$

$$= 2(32 + 21)$$

$$= 2 \times 53 \text{ cm}$$

$$= 106 \text{ cm}$$

Hence, the length of the wooden strip required is equal to 106 cm.

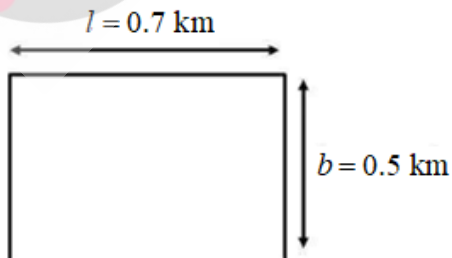
5. A rectangular piece of land measures 0.7 km by 0.5 km. Each side is to be fenced with 4 rows of wires. What is the length of the wire needed?

**Solution:**

Given, length = 0.7 km and breadth = 0.5 km

Since the 4 rows of wires are needed.

Therefore, the total length of wires is equal to 4 times the perimeter of rectangle.



$$\begin{aligned}\text{Perimeter of field} &= 2 \times (\text{length} + \text{breadth}) \\ &= 2 \times (0.7 + 0.5) \\ &= 2 \times 1.2 \\ &= 2.4 \text{ km} \\ &= 2.4 \times 1000 \text{ m} \\ &= 2400 \text{ m}\end{aligned}$$

Now, since each side is to be fenced with 4 rows of wires,

$$\begin{aligned}\text{Thus, the length of wire} &= 4 \times 2400 \\ &= 9600 \text{ m} = 9.6 \text{ km}\end{aligned}$$

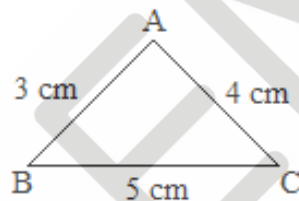
Hence, the length of the wire needed is 9.6 km

6. Find the perimeter of each of the following shapes:

- (A) A triangle of sides 3 cm, 4 cm and 5 cm.
- (B) An equilateral triangle of side 9 cm.
- (C) An isosceles triangle with equal sides 8 cm each and third side 6 cm.

**Solution:**

(A)

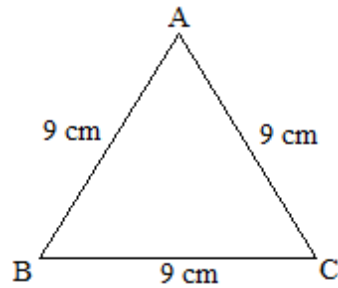


Given, the sides of the triangle are 3 cm, 4 cm and 5 cm.

$$\begin{aligned}\text{Perimeter of } \triangle ABC &= AB + BC + CA \\ &= 3 \text{ cm} + 5 \text{ cm} + 4 \text{ cm} \\ &= 12 \text{ cm}\end{aligned}$$

Hence, the perimeter of the triangle is 12 cm

(B)



Given, the equilateral triangle of side 9 cm

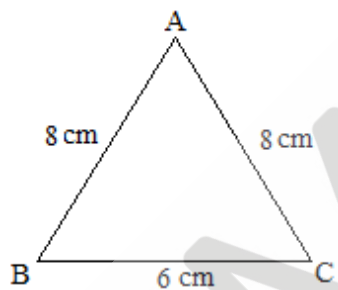
Perimeter of equilateral  $\triangle ABC = 3 \times \text{side}$

$$= 3 \times 9 \text{ cm}$$

$$= 27 \text{ cm}$$

Hence, the perimeter of the equilateral triangle is 27 cm

(C)



Given, an isosceles triangle with equal sides 8 cm each and third side 6 cm

Perimeter of  $\triangle ABC = AB + BC + CA$

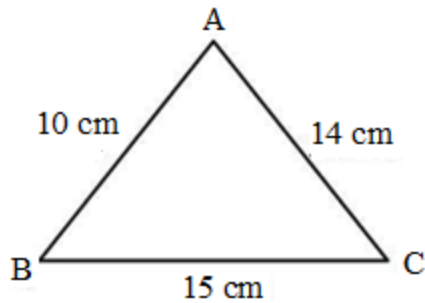
$$= 8 \text{ cm} + 6 \text{ cm} + 8 \text{ cm}$$

$$= 22 \text{ cm}$$

Hence, the perimeter of an isosceles triangle is 27 cm

7. Find the perimeter of a triangle with sides measuring 10 cm, 14 cm and 15 cm.

**Solution:**



Given, the sides of the triangle are 10 cm, 14 cm and 15 cm.

Perimeter of triangle = Sum of all the sides

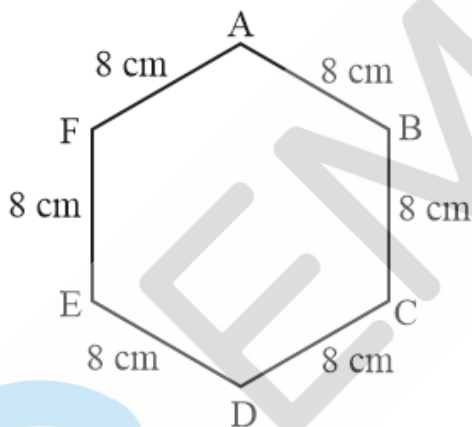
$$= 10 \text{ cm} + 14 \text{ cm} + 15 \text{ cm}$$

$$= 39 \text{ cm}$$

Therefore, the perimeter of triangle is 39 cm.

8. Find the perimeter of a regular hexagon with each side measuring 8 m.

**Solution:**



Given, each side of a regular hexagon is 8m

Perimeter of Hexagon =  $6 \times$  length of one side

$$= 6 \times 8\text{m}$$

$$= 48 \text{ m}$$

Hence, the perimeter of a regular hexagon is 48 m.

9. Find the side of the square whose perimeter is 20 m.

**Solution:**

Given, perimeter = 20 m



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

$$20 = 4 \times \text{side}$$

$$\Rightarrow \text{Side} = \frac{20}{4} = 5 \text{ cm}$$

Thus, side of square is 5 cm

10. The perimeter of a regular pentagon is 100 cm. How long is its each side?

**Solution:**

Given, perimeter of a regular pentagon = 100 cm

Perimeter of regular pentagon =  $5 \times \text{sides}$

$$5 \times \text{side} = 100 \text{ cm}$$

$$\Rightarrow \text{Side} = \frac{100}{5} = 20 \text{ cm}$$

Therefore, the side of regular pentagon is 20 cm.

11. A piece of string is 30 cm long. What will be the length of each side if the string is used to form?

- (A) a square?
- (B) an equilateral triangle?
- (C) a regular hexagon?

**Solution:**

- (A) If the string is used to form a square, then the length of the string is equal to the perimeter of the square.

$$\therefore \text{Perimeter of square} = 30 \text{ cm}$$

$$4 \times \text{side} = 30 \text{ cm}$$

$$\Rightarrow \text{Side} = \frac{30}{4} = 7.5 \text{ cm}$$

Hence, the length of each side of square is 7.5 cm

- (B) If the string is used to form an equilateral triangle, then the length of the string is equal to the perimeter of the equilateral triangle.

$$\therefore \text{Perimeter of equilateral triangle} = 30 \text{ cm}$$

$$3 \times \text{side} = 30 \text{ cm}$$

$$\Rightarrow \text{Side} = \frac{30}{3} = 10 \text{ cm}$$

Thus, the length of each side of equilateral triangle is 10 cm.

- (C) If the string is used to form a hexagon, then the length of the string is equal to the perimeter of the hexagon.

$$\therefore \text{Perimeter of hexagon} = 30 \text{ cm}$$

$$6 \times \text{side} = 30 \text{ cm}$$

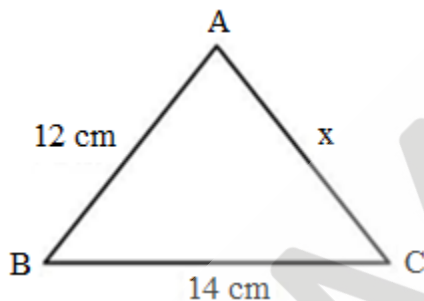
$$\Rightarrow \text{Side} = \frac{30}{6} = 5 \text{ cm}$$

Therefore, the length of each side of hexagon is 5 cm

12. Two sides of a triangle are 12 cm and 14 cm. The perimeter of the triangle is 36 cm. What is its third side?

**Solution:**

Let the length of third side be  $x$  cm.



Given, Length of the other two sides are 12 cm and 14 cm,

Now, Perimeter of triangle = 36 cm

$$\Rightarrow 12 + 14 + x = 36$$

$$26 + x = 36$$

$$x = 36 - 26$$

$$x = 10 \text{ cm}$$

Hence, the length of third side is 10 cm

13. Find the cost of fencing a square park of side 250 m at the rate of ₹20 per metre.

**Solution:**

Given, Side of square = 250 m

We know that, Perimeter of square =  $4 \times \text{side}$

$$= 4 \times 250$$

$$= 1000 \text{ m}$$

Since, cost of fencing of per meter = ₹20

Therefore, the cost of fencing of 1000 meters =  $20 \times 1000 = ₹20,000$

14. Find the cost of fencing a rectangular park of length 175 m and breadth 125 m at the rate of ₹12 per metre.

**Solution:**

Given,

Length of rectangular park = 175 m

Breadth of rectangular park = 125 m

∴ Perimeter of park =  $2 \times (\text{length} + \text{breadth})$

$$= 2 \times (175 + 125)$$

$$= 2 \times 300$$

$$= 600 \text{ m}$$

Since, the cost of fencing park per meter = ₹12

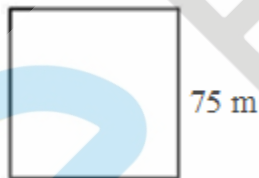
Hence, the cost of fencing park of 600 m =  $12 \times 600 = ₹7,200$

15. Sweety runs around a square park of side 75 m. Bulbul runs around a rectangular park with length 60 m and breadth 45 m. Who covers less distance?

**Solution:**

Given, sweety runs around a square park of side = 75 m

Bulbul runs around a rectangular park with length = 60 m and breadth = 45 m.

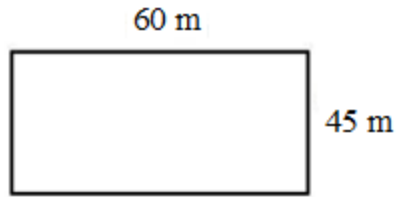


Distance covered by Sweety = Perimeter of square park

We know that, Perimeter of square =  $4 \times \text{side}$

$$= 4 \times 75 = 300 \text{ m}$$

Therefore, distance covered by Sweety is 300 m



Now, distance covered by Bulbul = Perimeter of rectangular park

We know that, Perimeter of rectangular park =  $2 \times (\text{length} + \text{breadth})$

$$= 2 \times (60 + 45)$$

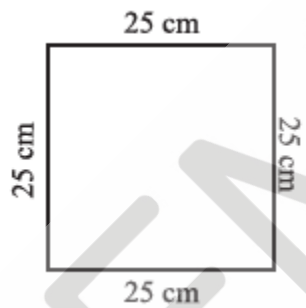
$$= 2 \times 105 = 210 \text{ m}$$

Thus, Bulbul covers the distance of 210 m.

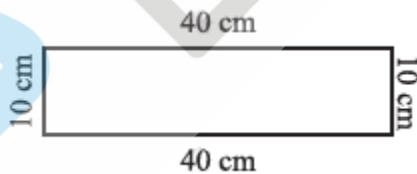
Hence, Bulbul covers less distance.

16. What is the perimeter of each of the following figures? What do you infer from the answers?

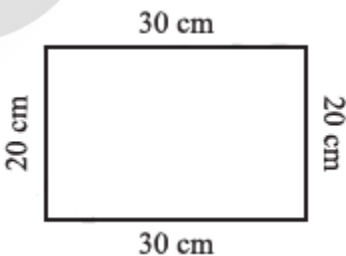
(A)



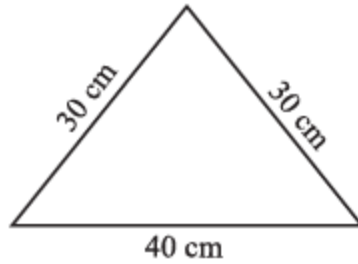
(B)



(C)



(D)

**Solution:**

(A) From the figure it is given that each side of a square is 25 cm

$$\begin{aligned}\therefore \text{Perimeter of square} &= 4 \times \text{side} \\ &= 4 \times 25 = 100 \text{ cm}\end{aligned}$$

Hence, the perimeter of the given square is 100 cm

(B) From the figure it is given that length = 40 cm and breadth = 10 cm

$$\begin{aligned}\therefore \text{Perimeter of rectangle} &= 2 \times (\text{length} + \text{breadth}) \\ &= 2 \times (40 + 10) \\ &= 2 \times 50 \\ &= 100 \text{ cm}\end{aligned}$$

Hence, the perimeter of the given rectangle is 100 cm

(C) From the figure it is given that length=30cm and breadth=20cm

$$\begin{aligned}\therefore \text{Perimeter of rectangle} &= 2 \times (\text{length} + \text{breadth}) \\ &= 2 \times (30 + 20) \\ &= 2 \times 50 \\ &= 100 \text{ cm}\end{aligned}$$

Hence, the perimeter of the given rectangle is 100 cm

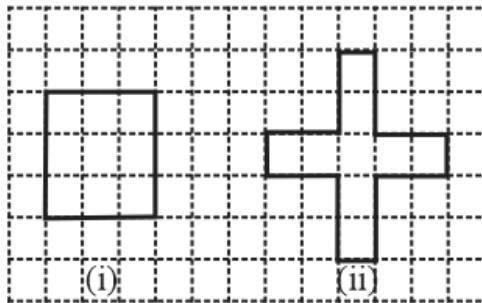
(D) From the figure it is given that the sides of triangle are 30 cm, 30 cm and 40 cm

$$\begin{aligned}\therefore \text{Perimeter of triangle} &= \text{Sum of all sides} \\ &= 30 \text{ cm} + 30 \text{ cm} + 40 \text{ cm} \\ &= 100 \text{ cm}\end{aligned}$$

Hence, the perimeter of the given square is 100 cm

Therefore, we infer that all the figures have same perimeter.

17. Avneet buys 9 square paving slabs, each with a side of  $\frac{1}{2}$  m. He lays them in the form of a square.



- (A) What is the perimeter of his arrangement [Fig. (i)]?
- (B) Shari does not like his arrangement. She gets him to lay them out like a cross. What is the perimeter of her arrangement [Fig (ii)]?
- (C) Which has greater perimeter?
- (D) Avneet wonders if there is a way of getting an even greater perimeter. Can you find a way of doing this? (The paving slabs must meet along complete edges i.e. they cannot be broken.)

**Solution:**

- (A) From the figure,

we can see that; it forms a square of side  $\frac{3}{2}$  m.

$$\therefore \text{perimeter} = 4 \times \text{side}$$

$$= 4 \times \frac{3}{2} = 6 \text{ m}$$

Hence, perimeter of his arrangement is 6 m

- (B) From the figure,

we can see that; it forms a cross which consists of four rectangles with two length and one breadth of 1 m and  $\frac{1}{2}$  m.

$$\therefore \text{perimeter} = 4 \times \left(1 + 1 + \frac{1}{2}\right) = 10 \text{ m.}$$

- (C) From the figure,

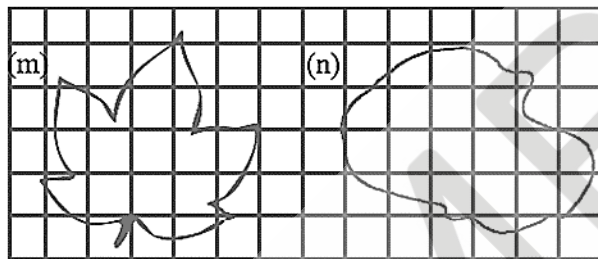
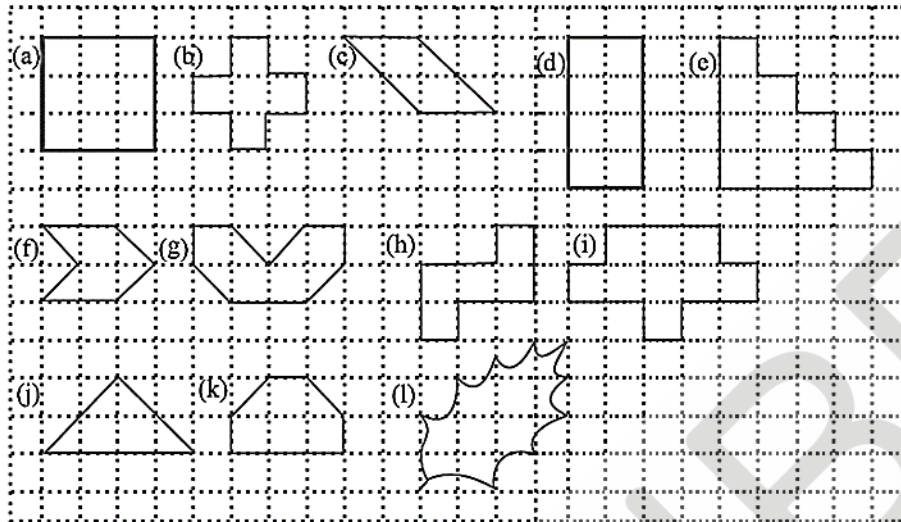
Second arrangement has greater perimeter.

Hence, shari's figure has greater perimeter.

- (D) Yes, if all the squares are arranged in row, the perimeter be 10 cm.

**Exercise: 10.2:**

1. Find the areas of the following figures by counting square:



**Solution:**

- (a) From the given figure,  
Number of filled squares = 9  
 $\therefore$  Area covered by squares =  $9 \times 1$   
= 9 sq. units  
Hence, the area of the given figure is 9 sq. units
- (b) From the given figure,  
Number of filled squares = 5  
 $\therefore$  Area covered by filled squares =  $5 \times 1$   
= 5 sq. units  
Hence, the area of the given figure is 5 sq. units
- (c) From the given figure,  
Number of full filled square = 2  
Number of half-filled squares = 4

$\therefore$  Area covered by full filled squares =  $2 \times 1 = 2$  sq. units

And area covered by half-filled squares  $4 \times \frac{1}{2} = 2$  sq. units

$\therefore$  Total area =  $2 + 2 = 4$  sq. units

Hence, the area of the given figure is 4 sq. units

(d) From the given figure,

Number of filled squares = 8

$\therefore$  Area covered by filled squares =  $8 \times 1$

= 8 sq. units

Hence, the area of the given figure is 8 sq. units

(e) From the given figure,

Number of filled squares = 10

$\therefore$  Area covered by filled squares =  $10 \times 1$

= 10 sq. units

Hence, the area of the given figure is 10 sq. units

(f) From the given figure,

Number of full filled square = 2

Number of half-filled squares = 4

$\therefore$  Area covered by full filled squares =  $2 \times 1 = 2$  sq. units

And area covered by half-filled squares  $4 \times \frac{1}{2} = 2$  sq. units

$\therefore$  Total area =  $2 + 2 = 4$  sq. units

Hence, the area of the given figure is 4 sq. units

(g) From the given figure,

Number of full filled square = 4

Number of half-filled squares = 4

$\therefore$  Area covered by full filled squares =  $4 \times 1 = 4$  sq. units

And area covered by half-filled squares  $4 \times \frac{1}{2} = 2$  sq. units

$\therefore$  Total area =  $4 + 2 = 6$  sq. units

Hence, the area of the given figure is 6 sq. units



- (h) From the given figure,  
Number of filled squares = 5  
 $\therefore$  Area covered by filled squares =  $5 \times 1$   
= 5 sq. units  
Hence, the area of the given figure is 5 sq. units
- (i) From the given figure,  
Number of filled squares = 9  
 $\therefore$  Area covered by filled squares =  $9 \times 1$   
= 9 sq. units  
Hence, the area of the given figure is 9 sq. units
- (j) From the given figure,  
Number of full filled square = 2  
Number of half-filled squares = 4  
 $\therefore$  Area covered by full filled squares =  $2 \times 1 = 2$  sq. units  
And area covered by half-filled squares  $4 \times \frac{1}{2} = 2$  sq. units  
 $\therefore$  Total area =  $2 + 2 = 4$  sq. units  
Hence, the area of the given figure is 4 sq. units
- (k) From the given figure,  
Number of full filled square = 4  
Number of half-filled squares = 2  
 $\therefore$  Area covered by full filled squares =  $4 \times 1 = 4$  sq. units  
And area covered by half-filled squares  $2 \times \frac{1}{2} = 1$  sq. units  
 $\therefore$  Total area =  $4 + 1 = 5$  sq. units  
Hence, the area of the given figure is 5 sq. units
- (l) From the given figure,  
Number of full filled square = 3  
Number of half-filled squares = 10  
 $\therefore$  Area covered by full filled squares =  $3 \times 1 = 3$  sq. units

And area covered by half-filled squares  $10 \times \frac{1}{2} = 5$  sq. units

$\therefore$  Total area =  $3 + 5 = 8$  sq. units

Hence, the area of the given figure is 8 sq. units

(m) From the given figure,

Number of full filled square = 7

Number of half-filled squares = 14

$\therefore$  Area covered by full filled squares =  $7 \times 1 = 7$  sq. units

And area covered by half-filled squares  $14 \times \frac{1}{2} = 7$  sq. units

$\therefore$  Total area =  $7 + 7 = 14$  sq. units

Hence, the area of the given figure is 14 sq. units

(n) From the given figure,

Number of full filled square = 10

Number of half-filled squares = 16

$\therefore$  Area covered by full filled squares =  $10 \times 1 = 10$  sq. units

And area covered by half-filled squares  $16 \times \frac{1}{2} = 8$  sq. units

$\therefore$  Total area =  $10 + 8 = 18$  sq. units

Hence, the area of the given figure is 18 sq. units

### Exercise: 10.3:

1. Find the areas of the rectangles whose sides are:

(A) 3 cm and 4 cm

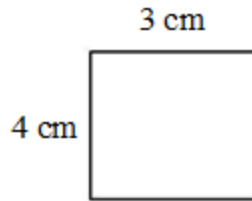
(B) 12 m and 21 m

(C) 2 km and 3 km

(D) 2 m and 70 cm

**Solution:**

(A) Given, length=3cm and breadth=4cm



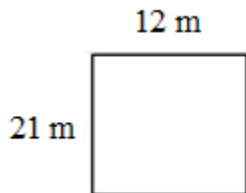
Area of rectangle = length  $\times$  breadth

Area of rectangle = 3 cm  $\times$  4 cm

= 12 cm<sup>2</sup>

Hence, the area of the given rectangle is 12 cm<sup>2</sup>

- (B) Given, length = 12 m and breadth = 21 m



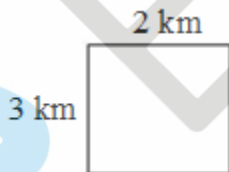
Area of rectangle = length  $\times$  breadth

Area of rectangle = 12 m  $\times$  21 m

= 252 m<sup>2</sup>

Hence, the area of the given rectangle is 252 m<sup>2</sup>

- (C) Given, length=2km and breadth=3km



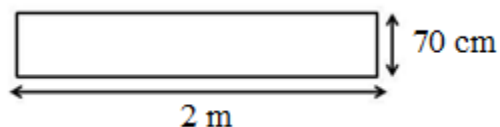
Area of rectangle = length  $\times$  breadth

Area of rectangle = 2 km  $\times$  3 km

= 6 km<sup>2</sup>

Hence, the area of the given rectangle is 6 km<sup>2</sup>

- (D) Given, length=2m and breadth=70cm



Area of rectangle = length  $\times$  breadth

Area of rectangle = 2 m  $\times$  70 cm

= 2 m  $\times$  0.7 m

= 1.4 m<sup>2</sup> [ $\because$  1 m = 100 cm]

Hence, the area of the given rectangle is 1.4 m<sup>2</sup>

2. Find the areas of the squares whose sides are:

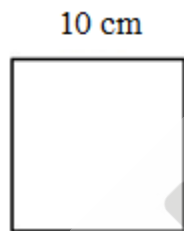
(A) 10 cm

(B) 14 cm

(C) 5 m

**Solution:**

(A)



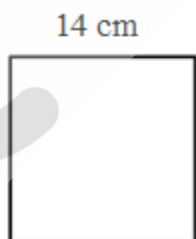
Given, side of square = 10 cm

Area of square = side  $\times$  side

$\therefore$  Area of square = 10 cm  $\times$  10 cm = 100 cm<sup>2</sup>

Hence, the area of the given square is 100 cm<sup>2</sup>

(B)



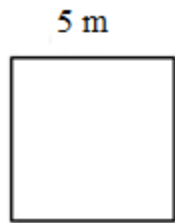
Given, side of square = 14 cm

Area of square = side  $\times$  side

$\therefore$  Area of square = 14 cm  $\times$  14 cm = 196 cm<sup>2</sup>

Hence, the area of the given square is  $196 \text{ cm}^2$

(C)



Given, side of square = 5 m

Area of square = side  $\times$  side

$\therefore$  Area of square =  $5 \text{ m} \times 5 \text{ m} = 25 \text{ m}^2$

Hence, the area of the given square is  $25 \text{ m}^2$

3. The length and breadth of three rectangles are as given below:

- (A) 9 m and 6 m
- (B) 17 m and 3 m
- (C) 4 m and 14 m

Which one has the largest area and which one has the smallest?

**Solution:**

(A) Given, length=9m and breadth = 6 m

$\therefore$  Area of rectangle = length  $\times$  breadth

Area of rectangle =  $9 \text{ m} \times 6 \text{ m} = 54 \text{ m}^2$

Hence, the area of the given rectangle is  $54 \text{ m}^2$

(B) Given, length = 3 m and breadth = 17 m

$\therefore$  Area of rectangle = length  $\times$  breadth

Area of rectangle =  $3 \text{ m} \times 17 \text{ m} = 51 \text{ m}^2$

Hence, the area of the given rectangle is  $51 \text{ m}^2$

(C) Given, length = 4 m and breadth = 14 cm

$\therefore$ Area of rectangle = length  $\times$  breadth

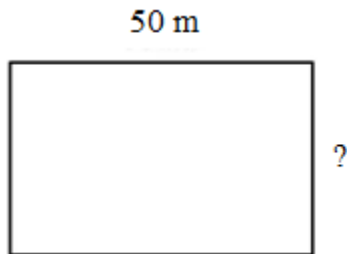
Area of rectangle =  $4 \text{ m} \times 14 \text{ m} = 56 \text{ m}^2$

Hence, the area of the given rectangle is  $56 \text{ m}^2$

Therefore, the rectangle (C) has largest area, and rectangle (B) has smallest area.

4. The area of a rectangular garden 50 m long is 300 sq m. Find the width of the garden.

**Solution:**



Given, Length of rectangle = 50 m and area of rectangle = 300 m<sup>2</sup>

We know that,

Area of rectangle = length × breadth

$$\text{Therefore, Breadth} = \frac{\text{Area of rectangle}}{\text{Length}} = \frac{300}{50} = 6 \text{ m}$$

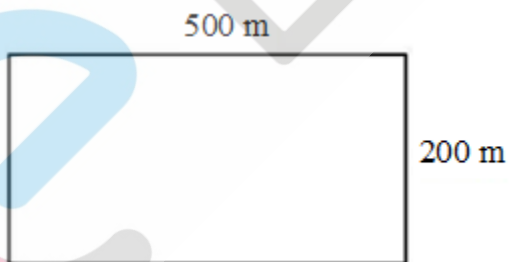
Hence, the breadth of the garden is 6 m.

5. What is the cost of tiling a rectangular plot of land 500 m long and 200 m wide at the rate of ₹8 per hundred sq m.?

**Solution:**

Given,

Length of land = 500 m and breadth of land = 200 m



Area of land = length × breadth = 500 m × 200 m = 1,00,000 m<sup>2</sup>

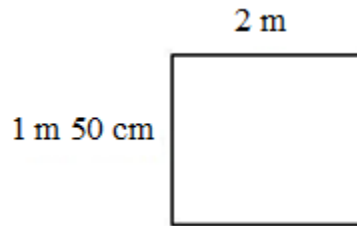
∴ Cost of tiling 100 sq. m of land = ₹8

$$\therefore \text{Cost of tiling 1,00,000 sq. m of land} = \frac{8 \times 100000}{100} = ₹8000$$

Hence, the cost of tiling a rectangular plot of land is ₹8000

6. A table-top measures 2 m by 1 m 50 cm. What is its area in square metres?

**Solution:**



Given, Length of table = 2 m

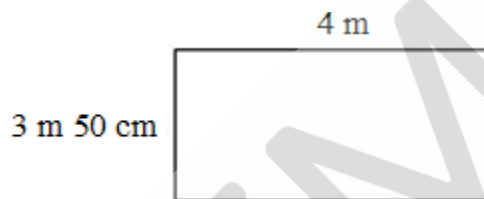
Breadth of table = 1 m 50 cm = 1.50 m

Also we know that, Area of table = length  $\times$  breadth  
 $= 2 \text{ m} \times 1.50 \text{ m} = 3 \text{ m}^2$

Hence, the area of the table is  $3 \text{ m}^2$

7. A room is 4 m long and 3 m 50 cm wide. How many square metres of carpet is needed to cover the floor of the room?

**Solution:**



Given, Length of room = 4 m

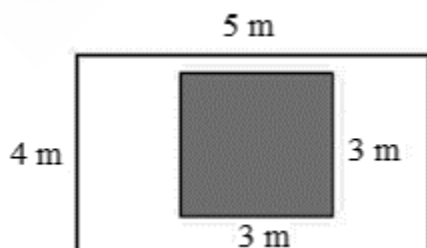
Breadth of room = 3 m 50 cm = 3.50 m

We know that, Area of carpet = length  $\times$  breadth  
 $= 4 \times 3.50 = 14 \text{ m}^2$

Hence, the area of the carpet needed to cover the floor of the room is  $14 \text{ m}^2$

8. A floor is 5 m long and 4 m wide. A square carpet of sides 3 m is laid on the floor. Find the area of the floor that is not carpeted.

**Solution:**



Given, Length of floor 5 m and breadth of floor = 4 m

Area of floor = length  $\times$  breadth

$$= 5 \text{ m} \times 4 \text{ m} = 20 \text{ m}^2$$

Now, side of square carpet = 3 m

Area of square carpet = side  $\times$  side

$$= 3 \times 3 = 9 \text{ m}^2$$

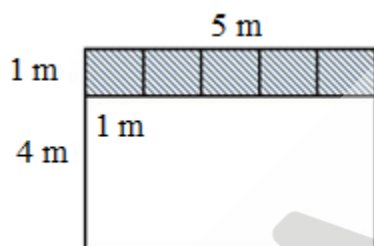
Area of floor that is not carpeted =  $20 \text{ m}^2 - 9 \text{ m}^2$

$$= 11 \text{ m}^2$$

Hence, the area of the floor that is not carpeted is  $11 \text{ m}^2$

9. Five square flower beds each of sides 1 m are dug on a piece of land 5 m long and 4 m wide. What is the area of the remaining part of the land?

**Solution**



Given, 5 square bed contains each side of = 1 m

Area of square bed = side  $\times$  side =  $1 \text{ m} \times 1 \text{ m} = 1 \text{ m}^2$

$$\therefore \text{Area of 5 square beds} = 1 \times 5 = 5 \text{ m}^2$$

Now, Length of land = 5 m

Breadth of land = 4 m

$\therefore$  Area of land = length  $\times$  breadth

$$= 5 \text{ m} \times 4 \text{ m} = 20 \text{ m}^2$$

Area of remaining part = Area of land - Area of 5 flower beds

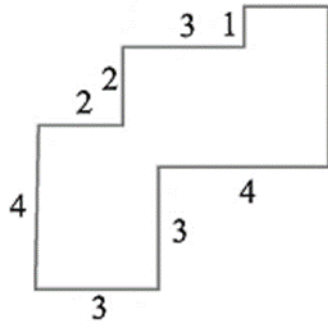
$$= 20 \text{ m}^2 - 5 \text{ m}^2 = 15 \text{ m}^2$$

Hence, the area of the remaining part of the land is  $15 \text{ m}^2$

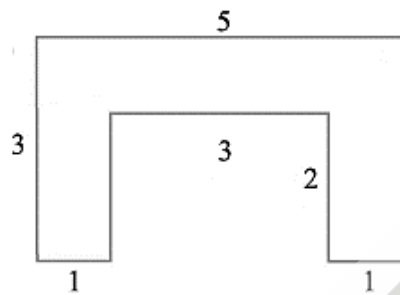
10. By splitting the following figures into rectangles, find their areas (The measures are given in centimetres).

(A)

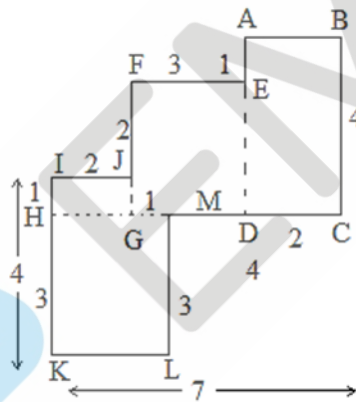




(B)

**Solution:**

(A) From the given figure, we get



$$\text{Area of HKLM} = 3 \times 3 = 9 \text{ cm}^2$$

$$\text{Area of IJGH} = 1 \times 2 = 2 \text{ cm}^2$$

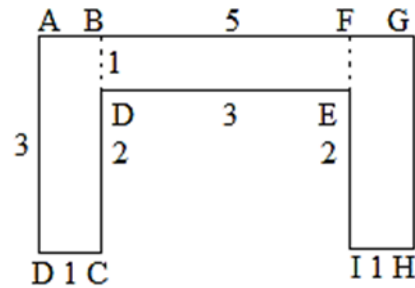
$$\text{Area of FEDG} = 3 \times 3 = 9 \text{ cm}^2$$

$$\text{Area of ABCD} = 2 \times 4 = 8 \text{ cm}^2$$

$$\text{Total area of the figure} = 9 + 2 + 9 + 8 = 28 \text{ cm}^2$$

Hence, the area of the given figure is  $28 \text{ cm}^2$

(B) From the given figure, we get



$$\text{Area of ABCD} = 3 \times 1 = 3 \text{ cm}^2$$

$$\text{Area of BDEF} = 3 \times 3 = 9 \text{ cm}^2$$

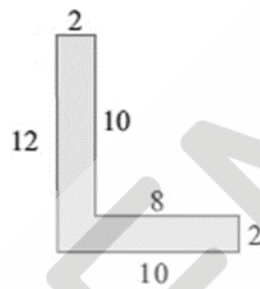
$$\text{Area of FGHI} = 3 \times 1 = 3 \text{ cm}^2$$

$$\text{Total area of the figure} = 3 + 9 + 3 = 15 \text{ cm}^2$$

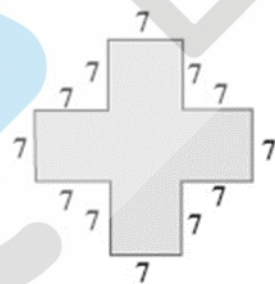
Hence, the area of the given figure is  $15 \text{ cm}^2$

11. Split the following shapes into rectangles and find their areas. (The measures are given in centimeters)

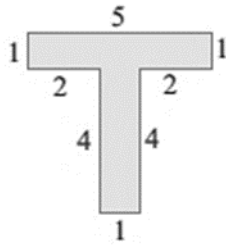
(A)



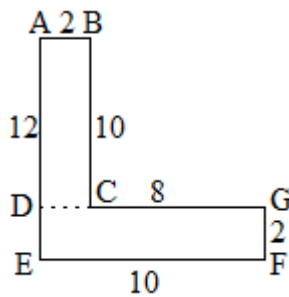
(B)



(C)

**Solution:**

(A) From the given figure, we get



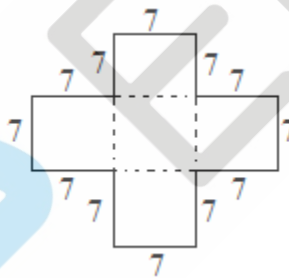
$$\text{Area of rectangle ABCD} = 2 \times 10 = 20 \text{ cm}^2$$

$$\text{Area of rectangle DEFG} = 10 \times 2 = 20 \text{ cm}^2$$

$$\text{Total area of the figure} = 20 + 20 = 40 \text{ cm}^2$$

Hence, the area of the given figure is  $40 \text{ cm}^2$

(B) From the given figure, we get



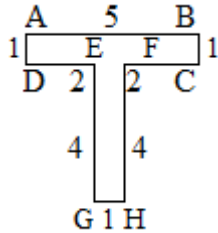
There are 5 squares each of side 7 cm

$$\text{Area of one square} = 7 \times 7 = 49 \text{ cm}^2$$

$$\text{Area of 5 squares} = 49 \times 5 = 245 \text{ cm}^2$$

Hence, the area of the given figure is  $245 \text{ cm}^2$

(C) From the given figure, we get



$$\text{Area of rectangle ABCD} = 5 \times 1 = 5 \text{ cm}^2$$

$$\text{Area of rectangle EFGH} = 4 \times 1 = 4 \text{ cm}^2$$

$$\text{Total area of the figure} = 5 + 4 \text{ cm}^2 = 9 \text{ cm}^2$$

Hence, the area of the given figure is  $9 \text{ cm}^2$

12. How many tiles whose length and breadth are 12 cm and 5 cm respectively will be needed to fit in a rectangular region whose length and breadth are respectively:

- (A) 100 cm and 144 cm  
 (B) 70 cm and 36 cm

**Solution:**

- (A) Given, length of the tile = 12 cm and breadth of the tile = 5 cm

$$\text{Area of one tile} = 5 \text{ cm} \times 12 \text{ cm} = 60 \text{ cm}^2$$

$$\text{Area of region} = 100 \text{ cm} \times 144 \text{ cm} = 14400 \text{ cm}^2$$

$$\text{Number of tiles} = \frac{\text{Area of region}}{\text{Area of one tile}}$$

$$= \frac{14400}{60} = 240$$

Therefore, 240 tiles are required.

- (B) Given, length of the tile = 12 cm and breadth of the tile = 5 cm

$$\text{Area of region} = 70 \text{ cm} \times 36 \text{ cm} = 2520 \text{ cm}^2$$

$$\text{Area of one tile} = 5 \text{ cm} \times 12 \text{ cm} = 60 \text{ cm}^2$$

$$\text{Number of tiles} = \frac{\text{Area of region}}{\text{Area of one tile}}$$

$$= \frac{2520}{60} = 42$$

Hence, 42 tiles are required.