

Class 5 Maths**Perimeter, Area and Volume – Word Problems**

Solve the following:

1. A square garden has side 30 m. Find the length of fencing required.
2. Two squares of side 4 cm each are joined together to make a new figure. What is the figure called? Find the perimeter and area of the new figure.
3. Two square stamps of side 1.5 cm are joined together. Find the area required to paste these two stamps?
4. Four equilateral triangles of side 4.5 cm are joined together to make a figure. Find the perimeter of the new figure?
5. A man is running around a square field of side 13.5m. How much distance does he cover in 3 rounds?
6. A piece of string is 80 cm. What will be the length of each side if the string is used to form a square?
7. Two sides of a triangle are 12cm and 14 cm. If the perimeter of the triangle is 36 cm, find the third side.
8. Mary has a cuboidal gift box of length 28cm, width 22cm and height 14 cm. John has a cuboidal gift box of length 20 cm, width 4 cm and height 2 cm. Find the volume of both the gift boxes and find which has smaller volume.
9. Goerge's bedroom measures 12 feet square. Nicky's bedroom is 11 feet long and 13 feet wide. Who has more floor space?
10. Alfred is going to paint two walls. Both the walls are 6 feet height. One wall is 12 feet long the other is 10 feet long. How much total area of wall he need to paint?

11. Abi is planting flower in her rectangle flower bed. If the sides of the bed are 5 feet and 7 feet. What is the area of the flower bed?
12. The side of a square room is 9 m. Find the area of the carpet needed to cover the floor.
13. Perimeter of a square field is 64m. Find its area.
14. A table top has to be painted. Its length is 1.5 m and breadth is 1.1 m. What is the area of the region to be painted? If the cost of painting is Rs. 500 per square meter, how much should be paid to get the table painted.
15. Find the length of a rectangle whose area is 273 m² and breadth is 7 m.

Solution

1. Square garden (side = 30 m)

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

$$= 4 \times 30$$

$$= \mathbf{120 \text{ m}}$$

Answer: Length of fencing required = **120 m**

2. Two squares of side 4 cm joined together

When two squares join side-by-side, they form a **rectangle**.

$$\text{Length} = 4 + 4 = 8 \text{ cm}$$

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

Perimeter

$$= 2 \times (L + B)$$

$$= 2 \times (8 + 4)$$

$$= 2 \times 12$$

$$= \mathbf{24 \text{ cm}}$$

Area

$$= L \times B$$

$$= 8 \times 4$$

$$= \mathbf{32 \text{ cm}^2}$$

Answer: Rectangle, Perimeter = **24 cm**, Area = **32 cm²**

3. Two square stamps (side = 1.5 cm)

Area of one square

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

$$= 1.5 \times 1.5$$

$$= 2.25 \text{ cm}^2$$

Area of two stamps

$$= 2 \times 2.25$$

$$= \mathbf{4.5 \text{ cm}^2}$$

4. Four equilateral triangles (side = 4.5 cm)

When four triangles join, the outer shape has **6 sides**.

Perimeter

$$= 6 \times 4.5$$

$$= \mathbf{27 \text{ cm}}$$

5. Running around square field (side = 13.5 m)

Perimeter

$$= 4 \times 13.5$$

$$= 54 \text{ m}$$

Distance in 3 rounds

$$= 54 \times 3$$

$$= \mathbf{162 \text{ m}}$$

6. String = 80 cm forming a square

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

$$4 \times \text{side} = 80$$

$$\text{side} = 80 \div 4$$

$$= \mathbf{20 \text{ cm}}$$

7. Triangle (two sides 12 cm, 14 cm, perimeter 36 cm)

Third side

$$= \text{Perimeter} - (\text{sum of other sides})$$

$$= 36 - (12 + 14)$$

$$= 36 - 26$$

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

8. Volume of cuboidal gift boxes

Volume = Length \times Breadth \times Height

Mary's box

$$= 28 \times 22 \times 14$$

$$= 8624 \text{ cm}^3$$

John's box

$$= 20 \times 4 \times 2$$

$$= 160 \text{ cm}^3$$

Answer: John's gift box has **smaller volume**.

9. Floor space of bedrooms**George's room**

Square room

Side = 12 ft

$$\text{Area} = 12 \times 12$$

$$= 144 \text{ sq ft}$$

Nicky's room

$$\text{Area} = 11 \times 13$$

$$= 143 \text{ sq ft}$$

Answer: George has more floor space.

10. Painting two walls

Height of each wall = 6 ft

Wall 1

$$\text{Area} = 12 \times 6 = 72 \text{ sq ft}$$

Wall 2

$$\text{Area} = 10 \times 6 = 60 \text{ sq ft}$$

Total area

$$= 72 + 60$$

$$= \mathbf{132 \text{ sq ft}}$$

11. Rectangle flower bed (5 ft, 7 ft)

Area

$$= \text{Length} \times \text{Breadth}$$

$$= 5 \times 7$$

$$= \mathbf{35 \text{ sq ft}}$$

12. Square room (side = 9 m)

Area

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

$$= 9 \times 9$$

$$= \mathbf{81 \text{ m}^2}$$

13. Square field (perimeter = 64 m)

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

$$\text{Side} = 64 \div 4$$

$$= 16 \text{ m}$$

Area

$$= 16 \times 16$$

$$= \mathbf{256 \text{ m}^2}$$

14. Table top painting

$$\text{Length} = 1.5 \text{ m}$$

$$\text{Breadth} = 1.1 \text{ m}$$

Area

$$= 1.5 \times 1.1$$

$$= \mathbf{1.65 \text{ m}^2}$$

Cost = Rs. 500 per m^2

Total cost

$$= 1.65 \times 500$$

$$= \mathbf{\text{Rs. 825}}$$

15. Rectangle (Area = 273 m^2 , Breadth = 7 m)

Area = Length \times Breadth

Length = Area \div Breadth

$$= 273 \div 7$$

$$= \mathbf{39 \text{ m}}$$