Mathematics

Chapter 10: Mensuration

Important Questions

Multiple Choice Questions:

Question 1. Perimeter of a rectangle =

(a) Length × Breadth

(b) Length + Breadth

(c) 2 × (Length + Breadth)

(d) 2 × (Length × Breadth).

Question 2. Perimeter of a square =

(a) 4 × Length of a side

(b) 2 × Length of a side

(c) 3 × Length of a side

(d) 6 × Length of a side.

Question 3. Perimeter of an equilateral triangle

(a) 2 × Length of a side

(b) 3 × Length of a side

(c) 4 × Length of a side

(d) 6 x Length of a side.

Question 4. Area of a rectangle =

(a) Length × Breadth

(b) Length + Breadth
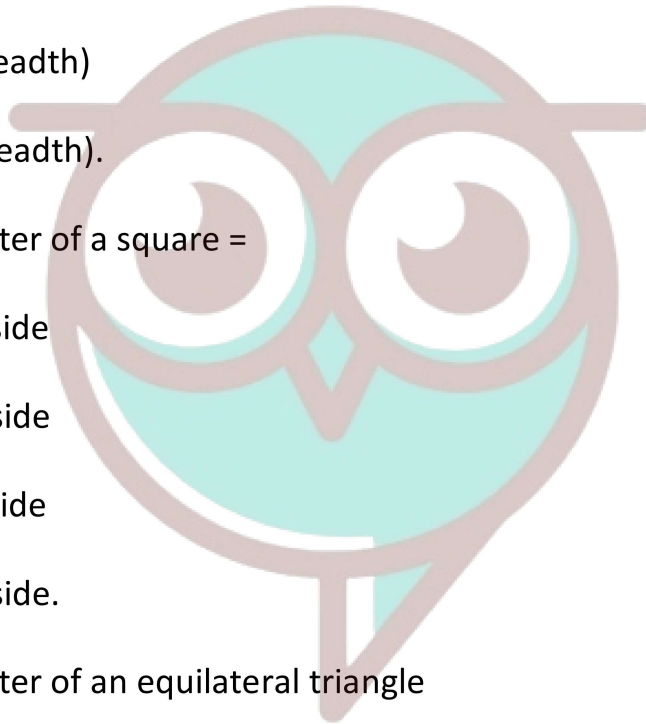
(c) 2 × (Length + Breadth)

(d) 2 × (Length × Breadth).

Question 5. Area of a square =

(a) side × side

(b) 4 × Length of a side

(c) 2 × Length of a side

(d) 6 × Length of a side.

Question 6. Perimeter of a regular pentagon =

(a) 4 × Length of a side

(b) 3 × Length of a side

(c) 6 × Length of a side

(d) 5 × Length of a side.

Question 7. Perimeter of a regular hexagon =

(a) 3 × Length of a side

(b) 4 × Length of a side

(c) 5 × Length of a side

(d) 6 × Length of a side.

Question 8. Apala went to a park 20 m long and 10 m wide. She took one complete round of it. The distance covered by her is:

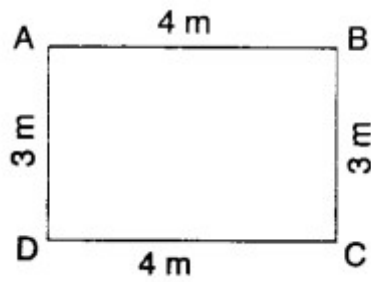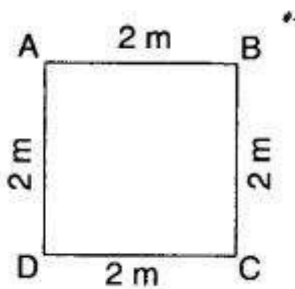(a) 30 m

(b) 60 m

(c) 20 m

(d) 10 m.

Question 9. The perimeter of the figure is

(a) 12m

(b) 14m

(c) 24 m

(d) 7 m.
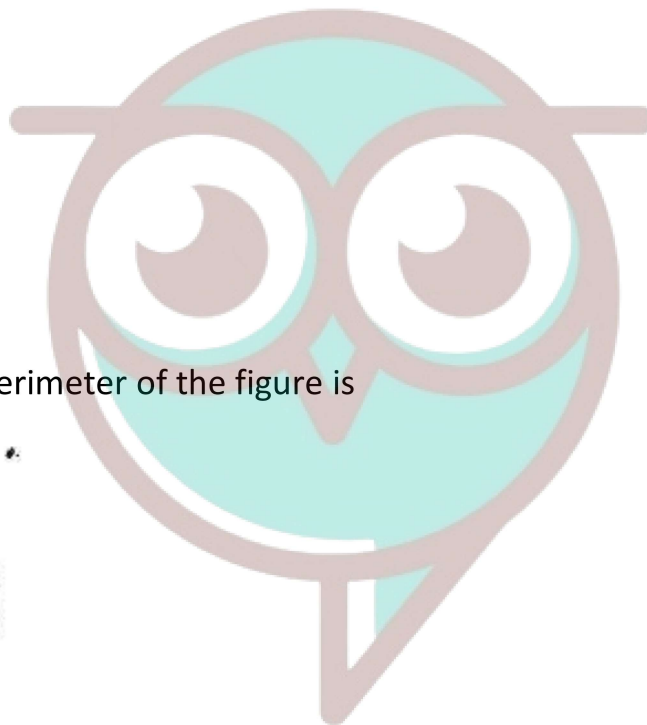
Question 10. The perimeter of the figure is

(a) 8m

(b) 16m

(c) 4m

(d) none of these.

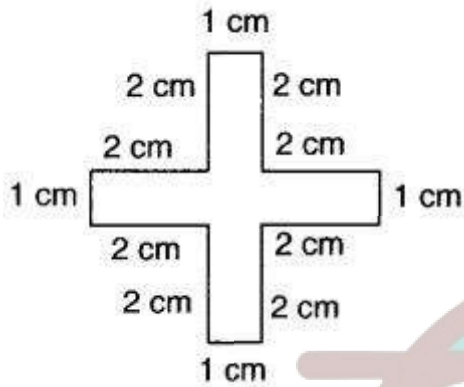Question 11. A page is 25 cm long and 20 cm wide. Find the perimeter of this page.

(a) 90 cm

(b) 45 cm

(c) 500 cm
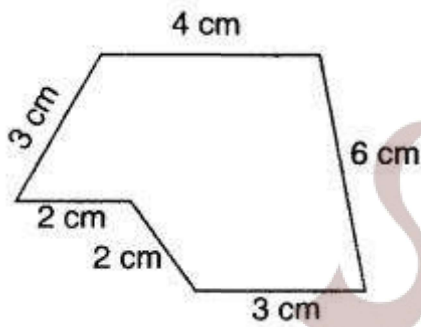
(d) 5 cm.

Question 12. The perimeter of the figure is

(a) 5 cm

(b) 10 cm

(c) 15 cm

(d) 20 cm.

Question 13. The perimeter of the figure is

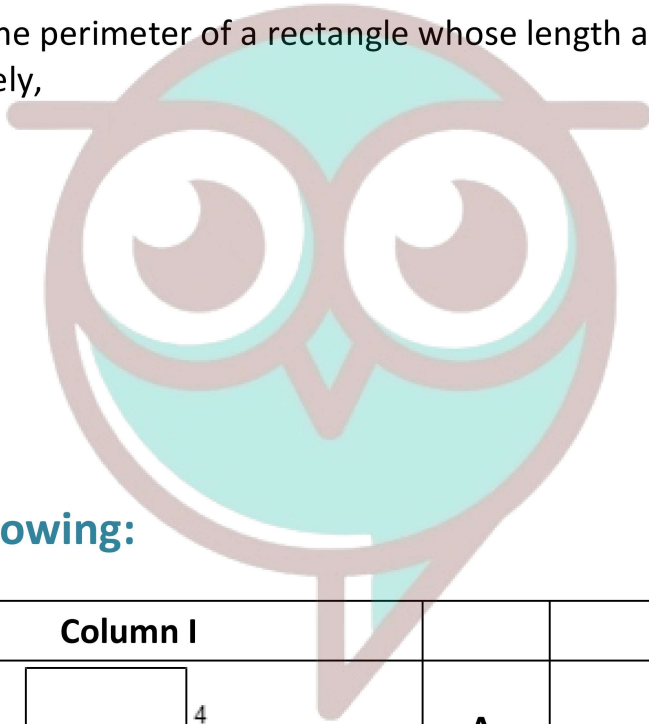

(a) 20 cm

(b) 10 cm

(c) 24 cm

(d) 15 cm.

Question 14. Meenu wants to put a lace border all around a rectangle table cover

2 m long and 1 m wide. Find the length of the lace required by Meenu.

(a) 3 m

(b) 4 m

(c) 5 m

(d) 6m.

Question 15. Find the perimeter of a rectangle whose length and breadth are 9 cm and 1 cm respectively,

(a) 10 cm

(b) 20 cm

(c) 30 cm

(d) 40 cm.

Match The Following:

	Column I		Column II
1.	rectangle 8 × 4	**A.**	15
2.	square 3 × 3	**B.**	8
3.	triangle 5, 5, 5	**C.**	24
4.	triangle 3, 3, 2	**D.**	12

Fill in the blanks:

1. _____ is a rectangle whose all sides are equal.

2. The amount of surface enclosed by a figure is called its _____.

3. For fencing the plot, we need to calculate its _____.

4. _____ is the sum of all sides.

True /False:

1. For tiling a rectangular Plot, we must calculate its area.

2. Length and breadth of a Rectangle are 1.5m and 1m. Area is 1.5m^2.

3. The Perimeter of a square is 4 times the length of the side.

4. To find the length of fencing the square playground we must find its Perimeter.

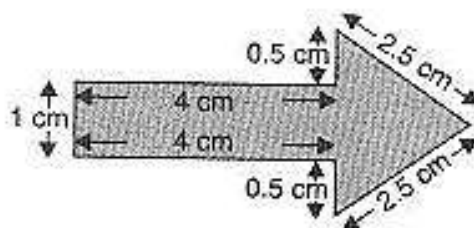## Very Short Questions:

1. Find the area of the rectangle whose side are:3 cm and 4 cm

2. Find the area of the rectangle whose side are:12 m and 21 m
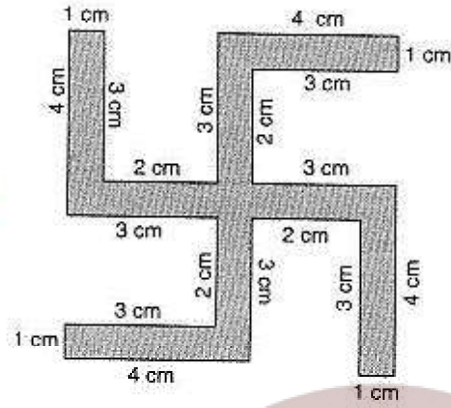
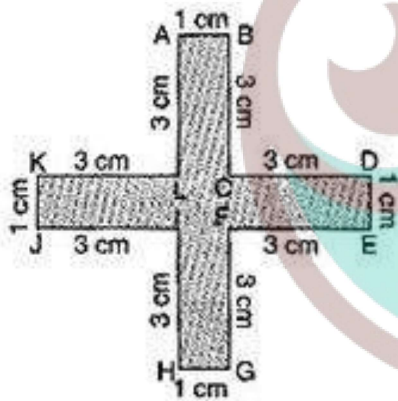3. Find the perimeter of each of the following figures given below?
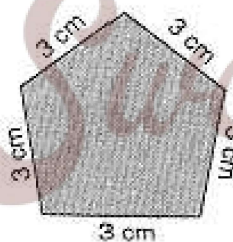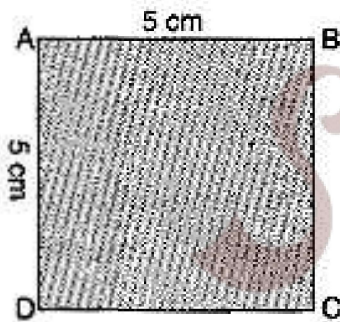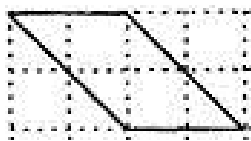
(iii)

4. Find the perimeter of the following figure?

5. Find the perimeter of the following figure given below.
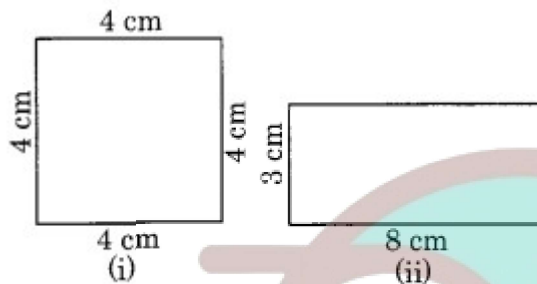

**6.** Find the area of the following figure:

7. The length of rectangle is thrice its breadth and its perimeter is 48cm. Find length and breadth of rectangle.

8. The perimeter of a square is 64 cm. Find the length of each side.

9. Length and breadth of a rectangular table-top are 36 cm and 24 cm respectively. Find its perimeter.

10. Which of the following figure has greater perimeter?

Short Questions:

1. How much distance will you have to travel in going around each of the following figures?
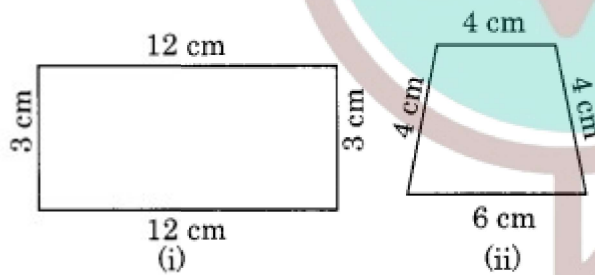
2. Find the perimeter of a square whose side is 15 cm.

3. Find the cost of fencing a rectangular park 300 m long and 200 m wide at the rate of ₹4 per metre.

4. Find the area of a square field whose each side is 150 m.

5. Length and breadth of a rectangular paper are 22 cm and 10 cm respectively. Find the area of the paper.

6. Find the length of a rectangle given that its perimeter is 880 m and breadth is 88 m.

7. How many trees can be planted at a distance of 6 metres each around a rectangular plot whose length is 120 m and breadth is 90 m?

Long Questions:

1. A rectangular park is 30 metres long and 20 metres broad. A steel wire fence is put up all around it. Find the cost of putting the fence at the rate of ₹15 per metre.

2. Find the area of the figures A, B, C and D drawn on a squared paper in the following figure by counting squares.
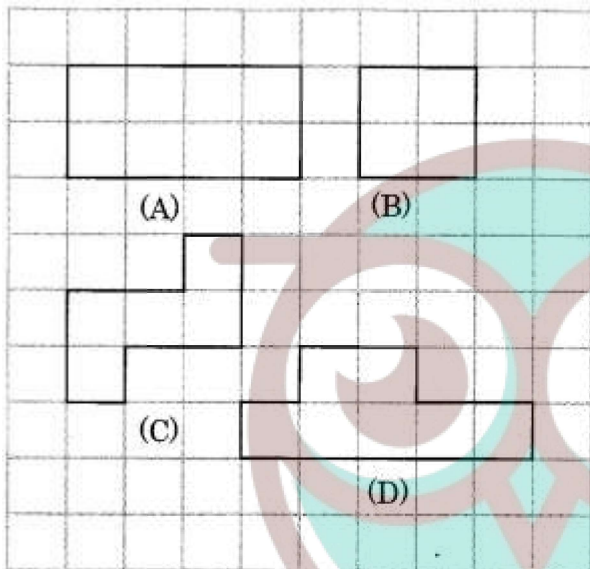
3. A rectangle and a square have the same perimeter 100 cm. Find the side of the square. If the rectangle has a breadth 2 cm less than that of the square. Find the breadth, length and area of the rectangle.

4. Fencing the compound of a house costs ₹5452. If the rate is ₹94 per metre, find the perimeter of the compound. If the breadth is 10 m, find its length.

Assertion and Reason Questions:

1.) Assertion (A) – Perimeter of a rectangle =2 × (Length × Breadth).

Reason (R) – Perimeter is the distance covered along the boundary forming a closed figure when you go round the figure once

a) Both A and R are true and R is the correct explanation of A

b) Both A and R are true but R is not the correct explanation of A

c) A is true but R is false

d) A is false but R is true

2.) Assertion (A) – Perimeter of a square = 4 × Length of a side

Reason (R) – Perimeter is the distance covered along the boundary forming a closed figure when you go round the figure once

a) Both A and R are true and R is the correct explanation of A

b) Both A and R are true but R is not the correct explanation of A

c) A is true but R is false

d) A is false but R is true

ANSWER KEY -

Multiple Choice questions:

1. (c) 2 × (Length + Breadth)

2. (a) 4 × Length of a side

3. (b) 3 × Length of a side

4. (a) Length × Breadth

5. (a) side × side

6. (d) 5 × Length of a side.

7. (d) 6 × Length of a side.

8. (b) 60 m

   Hint:

   Distance covered = 2(20 + 10) = 60 m

9. (b) 14m

   Hint:

   Perimeter = 2(4 + 3) = 14m

10. (a) 8m

    Hint:

    Perimeter = 4 × 2 = 8m

11. (a) 90 cm

    Hint:

    Perimeter = 2(25 + 20) = 90 cm

12. (d) 20 cm.

    Hint:

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Perimeter = 4(1 + 2 + 2) = 20cm

13. (a) 20 cm

Hint:
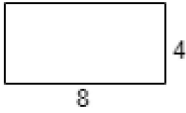
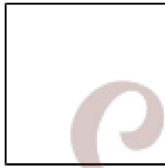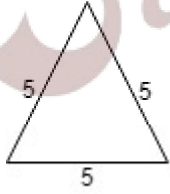Perimeter = 4 + 3 + 2 + 2 + 3 + 6 = 20 cm

14. (d) 6m.

Hint:

Length of the lace = 2(2 + 1) = 6 m

15. (b) 20 cm

Hint:

Perimeter = 2(9 + 1) = 20 cm

Match The Following:

	Column I		Column II
1.	rectangle 8 × 4	C.	24
2.	square 3 × 3	D.	12
3.	triangle 5, 5, 5	A.	15
4.	triangle 3, 3, 2	B.	8

Fill in the blanks:

1. **Square** is a rectangle whose all sides are equal.

2. The amount of surface enclosed by a figure is called its **area**.

3. For fencing the plot, we need to calculate its **Perimeter**.

4. **Perimeter** is the sum of all sides.

True /False:

1. True

2. True

3. True

4. True

Very Short Answer:

1. Area of the rectangle = Length × Breadth = 3 × 4 cm = 12 sq cm

2. Area of the rectangle = Length × Breadth = 12 m × 21 m = 252 sq m

3. (i) Perimeter = 3 cm + 3 cm + 3 cm + 3 cm + 3 cm

    = 15 cm

    (ii) Perimeter = 1 cm + 4 cm + 0.5 cm + 2.5 cm + 2.5 cm + 0.5 cm + 4 cm

    = 15 cm

    (iii) Perimeter = 1 cm + 3 cm + 2 cm + 3 cm + 4 cm + 1 cm + 3 cm + 2 cm + 3 cm + 4 cm + 1 cm + 3 cm + 2 cm + 3 cm + 4 cm + 1 cm + 3 cm + 2 cm + 3 cm + 4 cm

    = 52 cm

4. Perimeter

    = AB + BC + CD + DE + EF + FG + GH + HI + IJ + JK + KL + LA

    = 1 cm + 3 cm + 3 cm + 1 cm + 3 cm + 3 cm + 1 cm + 3 cm + 3 cm + 1 cm + 3 cm + 3 cm

= 28 cm

5. Perimeter

= AB + BC + CD + DA

= 5 cm + 5 cm + 5 cm + 5 cm = 20

6. Full-filled squares = 2

half-filled squares = 4

Area covered by full squares = 2 × 1 sq unit = 2 sq units

Area covered by half squares = 4 × 12

 12 sq unit = 2 sq units

∴ Total Area = 2 sq units + 2 sq units = 4 sq units

7. Let the breadth of rectangle = b

length of rectangle = 3b

Perimeter of rectangle = 2 × (3b + b)

48 = 2 × (3b + b)

$$\frac{48}{2} = 4b$$

24 = 4b

$$\frac{24}{4} = b$$

⇒ 6 = b ⇒ breadth = 6cm

length = 3b = 3 × b = 18cm

8. Perimeter of the square = 64 cm

$$\therefore \text{Length of its side} = \frac{\text{Perimeter}}{\text{Number of sides}}$$

$$= \frac{64}{4} = 16 \text{ cm.}$$

9. Length of the rectangular table-top = 36 cm

and its breadth = 24 cm.

10. ∴ Perimeter of the table-top = 2 [length + breadth]

= 2 [36 cm + 24 cm]

= 2 × 60 cm = 120 cm.

Fig. (i) Perimeter of the square = 4 × side

= 4 × 4 cm = 16 cm

Fig. (ii) Perimeter of the rectangle

= 2 [length + breadth]

= 2[8 cm + 3 cm]

= 2 × 11 cm = 22 cm

Since 22 cm > 16 cm

∴ Rectangle has greater perimeter than the square.

Short Answer:

1. Distance travelled in going around Fig. (i)

= 12 cm + 3 cm + 12 cm + 3 cm = 30 cm

Distance travelled in going around Fig. (ii)

= 6 cm + 4 cm + 4 cm + 4 cm = 18 cm

2. Side of the square = 15 cm

∴ Perimeter of the square = 15 cm × 4 = 60 cm

3. Length of the park = 300 m

Breadth = 200 m

∴ Perimeter of the park = 2 [length + breadth]

= 2 [300 m + 200 m]

= 2 × 500 m = 1000 m.

Cost of fencing the rectangular park = 1000 × 4 = ₹ 4000

4. Side of the square field = 150 m

∴ Area of the square field = Side × Side

= 150 m × 150 m

= 22500 sq m.

5. Length of the rectangular paper = 22 cm

Breadth = 10 cm

∴ Area of the rectangular paper = length × breadth

= 22 cm × 10 cm

= 220 sq cm

6. Perimeter of the rectangle = 2 [length + breadth]

∴ 2 [length + breadth] = 880

length + breadth = 880 ÷ 2 = 440

∵ Breadth = 88 m

∴ Length = 440 m − 88 m = 352 m

Hence, the required length = 352 m.

7. Length of the rectangular plot = 120 m

Breadth = 90 m

∴ Perimeter of the rectangular plot

= 2 [length + breadth]

= 2 [120 m + 90 m]

= 2 × 210 m = 420 m

Now distance between two trees = 6 m

∴ Number of trees around the rectangular plot = 420 m ÷ 6 m = 70

Long Answer:

1.   Length of the rectangular park = 30 m

Breadth = 20 m

∴ Perimeter of the rectangular park = 2(length + breadth)

= 2 [30 + 20] = 2 × 50 m = 100 m

∴ Cost of fencing all around the park = ₹15 × 100 = ₹1500

2.   (A) Counting the squares, we have 8 squares

∴ Area = 8 sq units

(B) Counting the squares, we have 4 squares

∴ Area = 4 sq units

(C) Counting the squares, we have 5 squares

∴ Area = 5 sq units

(D) Counting the squares, we have 7 squares

∴ Area = 7 sq units

3.   Perimeter of the square = 100 cm

Perimeter 100

$$\text{Side of the square} = \frac{\text{Perimeter}}{4} = \frac{100}{4}$$

25 cm.

∴ Breadth of the rectangle = 25 cm – 2 cm = 23 cm

Now perimeter of the rectangle = 100 cm

∴ 2 [length + breadth] = 100

length + breadth = 100 ÷ 2 = 50 cm

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But breadth = 23 cm

∴ Length = 50 cm – 23 cm = 27 cm

Now, Area of the rectangle

= length × breadth = 27 cm × 23 cm

= 621 sq cm.

4.   Cost of fencing the compound = ₹5452

and the rate of fencing = ₹94 per metre

∴ Perimeter of the compound = 5452 ÷ 94 = 58 metres

Now breadth of the compound = 10 m.

2 [length + breadth] = 58 m

∴ length + breadth = 58 + 2 m = 29 m

∴ Length of the compound = 29 m – 10 m = 19 m.

Assertion and Reason Answers:

1) d) A is false but R is true

2) d) A is false but R is true