

UNIQUE STUDY POINT

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Class: VI	Subject: Mathematics	Session: 2025-26
Chapter: 06 - Perimeter and Area	Time: 1½ Hours	Max. Marks: 40

General Instructions:

1. All questions are compulsory.
2. This question paper contains 20 questions divided into five sections A, B, C, D and E.
3. Section A contains 10 MCQs of 1 mark each.
4. Section B contains 4 questions of 2 marks each.
5. Section C contains 3 questions of 3 marks each.
6. Section D contains 1 question of 5 marks.
7. Section E contains 2 Case Study Based questions of 4 marks each.

SECTION A - Multiple Choice Questions (1 mark each)

1. The perimeter of a square with side 8 cm is:
(a) 16 cm
(b) 32 cm
(c) 64 cm
(d) 24 cm
2. The formula for the perimeter of a rectangle is:
(a) $4 \times \text{side}$
(b) $\text{length} \times \text{breadth}$
(c) $2 \times (\text{length} + \text{breadth})$
(d) $\text{length} + \text{breadth}$
3. A rectangular park is 40 m long and 30 m wide. What is its perimeter?
(a) 70 m
(b) 140 m
(c) 1200 m
(d) 100 m
4. The area of a square with side 10 cm is:
(a) 40 sq cm
(b) 100 sq cm
(c) 20 sq cm
(d) 50 sq cm
5. A rectangle has length 12 m and breadth 8 m. Its area is:
(a) 40 sq m
(b) 96 sq m

- (c) 20 sq m
(d) 48 sq m
6. The perimeter of an equilateral triangle with side 6 cm is:
(a) 12 cm
(b) 18 cm
(c) 24 cm
(d) 36 cm
7. If the perimeter of a square is 24 cm, its side is:
(a) 4 cm
(b) 6 cm
(c) 8 cm
(d) 12 cm
8. The area of a rectangle is 48 sq m and its length is 8 m. Its breadth is:
(a) 6 m
(b) 8 m
(c) 10 m
(d) 12 m
9. Which of the following has the largest perimeter?
(a) A square of side 5 cm
(b) A rectangle of length 7 cm and breadth 3 cm
(c) An equilateral triangle of side 7 cm
(d) A rectangle of length 6 cm and breadth 4 cm
10. The formula for the area of a triangle is:
(a) base \times height
(b) $\frac{1}{2} \times$ base \times height
(c) $2 \times$ base \times height
(d) $\frac{1}{2} \times$ perimeter

SECTION B - Short Answer Questions (2 marks each)

11. A wire of length 32 cm is bent to form a square. Find the side of the square and also find its area.
12. The length and breadth of a rectangular field are 50 m and 30 m respectively. Find the cost of fencing the field at the rate of ₹15 per metre.
13. A rectangular garden is 25 m long and 15 m wide. Find the length of the wire required to fence it with 2 rounds.
14. Find the perimeter of a triangle with sides 7 cm, 8 cm and 9 cm. If the triangle is made using a wire and then the wire is straightened to form a square, what will be the side of the square?

SECTION C - Short Answer Questions (3 marks each)

15. A rectangular plot of land measures 80 m by 60 m. A path of width 5 m runs all around inside the plot. Find the area of the path.
16. The perimeter of a rectangular field is 240 m. If the length is 70 m, find its breadth and area.

17. A square and a rectangle have the same perimeter of 40 cm. If the rectangle has length 12 cm, which figure has the greater area and by how much?

SECTION D - Long Answer Question (5 marks)

18. A rectangular hall is 18 m long and 12 m wide. A square carpet of side 8 m is laid on the floor. Four square flower beds, each of side 2 m, are placed at the four corners of the hall.

- Find the area of the carpet.
- Find the total area of the four flower beds.
- Find the area of the floor that is not covered by the carpet and flower beds.
- Find the perimeter of the hall.
- Find the cost of polishing the uncovered floor at ₹25 per sq m.

SECTION E - Case Study Based Questions (4 marks each)

19. Running Track

Raj and Simran are running on two different rectangular tracks. Raj's track is 70 m long and 40 m wide. Simran's track is 60 m long and 50 m wide.

- Find the perimeter of Raj's track. (1 mark)
- Find the perimeter of Simran's track. (1 mark)
- If Raj completes 5 rounds, what total distance does he cover? (1 mark)
- Whose track has a larger area and by how much? (1 mark)

20. Garden Design

Mrs. Sharma has a rectangular garden that is 30 m long and 20 m wide. She wants to create a walking path of width 2 m all around inside the garden and plant grass on the remaining area.

- What will be the perimeter of the garden? (1 mark)
- What will be the dimensions of the inner rectangle (after the path)? (1 mark)
- What is the area of the walking path? (1 mark)
- Find the cost of planting grass at ₹20 per sq m. (1 mark)

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SECTION A - Answers to MCQs

1. (b) 32 cm

Perimeter of square = $4 \times \text{side} = 4 \times 8 = 32 \text{ cm}$

2. (c) $2 \times (\text{length} + \text{breadth})$

The perimeter of a rectangle is twice the sum of its length and breadth.

3. (b) 140 m

Perimeter = $2 \times (40 + 30) = 2 \times 70 = 140 \text{ m}$

4. (b) 100 sq cm

Area of square = $\text{side} \times \text{side} = 10 \times 10 = 100 \text{ sq cm}$

5. (b) 96 sq m

Area of rectangle = $\text{length} \times \text{breadth} = 12 \times 8 = 96 \text{ sq m}$

6. (b) 18 cm

Perimeter of equilateral triangle = $3 \times \text{side} = 3 \times 6 = 18 \text{ cm}$

7. (b) 6 cm

Side = $\text{Perimeter} \div 4 = 24 \div 4 = 6 \text{ cm}$

8. (a) 6 m

Breadth = $\text{Area} \div \text{length} = 48 \div 8 = 6 \text{ m}$

9. (c) An equilateral triangle of side 7 cm

(a) Square: $4 \times 5 = 20 \text{ cm}$

(b) Rectangle: $2 \times (7 + 3) = 20 \text{ cm}$

(c) Triangle: $3 \times 7 = 21 \text{ cm}$ (Largest)

(d) Rectangle: $2 \times (6 + 4) = 20 \text{ cm}$

10. (b) $\frac{1}{2} \times \text{base} \times \text{height}$

Area of triangle is half the product of base and height.

SECTION B - Answers to Short Answer Questions

11.

Given: Length of wire = 32 cm

Step 1: The wire forms a square, so perimeter of square = 32 cm

Step 2: Side of square = $32 \div 4 = 8 \text{ cm}$

Step 3: Area of square = $8 \times 8 = 64 \text{ sq cm}$

Answer: Side = 8 cm, Area = 64 sq cm

12.

Given: Length = 50 m, Breadth = 30 m, Rate = ₹15 per m

Step 1: Perimeter = $2 \times (50 + 30) = 2 \times 80 = 160$ m

Step 2: Cost = $160 \times 15 = ₹2400$

Answer: Cost of fencing = ₹2400

13.

Given: Length = 25 m, Breadth = 15 m, Rounds = 2

Step 1: Perimeter = $2 \times (25 + 15) = 2 \times 40 = 80$ m

Step 2: Wire needed = $80 \times 2 = 160$ m

Answer: Length of wire = 160 m

14.

Given: Sides of triangle = 7 cm, 8 cm, 9 cm

Step 1: Perimeter = $7 + 8 + 9 = 24$ cm

Step 2: Same wire forms a square, so perimeter = 24 cm

Step 3: Side of square = $24 \div 4 = 6$ cm

Answer: Perimeter = 24 cm, Side of square = 6 cm

SECTION C - Answers to Short Answer Questions

15.

Given: Plot dimensions = 80 m \times 60 m, Path width = 5 m

Step 1: Area of plot = $80 \times 60 = 4800$ sq m

Step 2: Inner dimensions (after path) = $(80 - 2 \times 5) \times (60 - 2 \times 5) = 70 \times 50$

Step 3: Area of inner rectangle = $70 \times 50 = 3500$ sq m

Step 4: Area of path = $4800 - 3500 = 1300$ sq m

Answer: Area of the path = 1300 sq m

16.

Given: Perimeter = 240 m, Length = 70 m

Step 1: $2 \times (\text{length} + \text{breadth}) = 240$

Step 2: $70 + \text{breadth} = 120$

Step 3: Breadth = $120 - 70 = 50$ m

Step 4: Area = $70 \times 50 = 3500$ sq m

Answer: Breadth = 50 m, Area = 3500 sq m

17.

Given: Both have perimeter = 40 cm, Rectangle length = 12 cm

For Square:

Side = $40 \div 4 = 10$ cm

Area = $10 \times 10 = 100$ sq cm

For Rectangle:

$2 \times (12 + \text{breadth}) = 40$

$12 + \text{breadth} = 20$

Breadth = 8 cm

Area = $12 \times 8 = 96$ sq cm

Answer: Square has greater area by $100 - 96 = 4$ sq cm

SECTION D - Answer to Long Answer Question

18.

Given: Hall = $18 \text{ m} \times 12 \text{ m}$, Carpet = $8 \text{ m} \times 8 \text{ m}$, Flower beds = $2 \text{ m} \times 2 \text{ m}$ (4 beds)

(a) Area of carpet:

$$\text{Area} = 8 \times 8 = 64 \text{ sq m}$$

(b) Total area of flower beds:

$$\text{Area of one bed} = 2 \times 2 = 4 \text{ sq m}$$

$$\text{Total area} = 4 \times 4 = 16 \text{ sq m}$$

(c) Uncovered floor area:

$$\text{Total area of hall} = 18 \times 12 = 216 \text{ sq m}$$

$$\text{Covered area} = 64 + 16 = 80 \text{ sq m}$$

$$\text{Uncovered area} = 216 - 80 = 136 \text{ sq m}$$

(d) Perimeter of hall:

$$\text{Perimeter} = 2 \times (18 + 12) = 2 \times 30 = 60 \text{ m}$$

(e) Cost of polishing:

$$\text{Cost} = 136 \times 25 = ₹3400$$

Answers: (a) 64 sq m, (b) 16 sq m, (c) 136 sq m, (d) 60 m, (e) ₹3400

SECTION E - Answers to Case Study Based Questions

19.

(a) Perimeter of Raj's track:

$$\text{Perimeter} = 2 \times (70 + 40) = 2 \times 110 = 220 \text{ m}$$

(b) Perimeter of Simran's track:

$$\text{Perimeter} = 2 \times (60 + 50) = 2 \times 110 = 220 \text{ m}$$

(c) Distance covered by Raj in 5 rounds:

$$\text{Distance} = 220 \times 5 = 1100 \text{ m}$$

(d) Comparing areas:

$$\text{Raj's track area} = 70 \times 40 = 2800 \text{ sq m}$$

$$\text{Simran's track area} = 60 \times 50 = 3000 \text{ sq m}$$

$$\text{Simran's track is larger by } 3000 - 2800 = 200 \text{ sq m}$$

Answers: (a) 220 m, (b) 220 m, (c) 1100 m, (d) Simran's by 200 sq m

20.

(a) Perimeter of garden:

$$\text{Perimeter} = 2 \times (30 + 20) = 2 \times 50 = 100 \text{ m}$$

(b) Dimensions of inner rectangle:

$$\text{Length} = 30 - 2 \times 2 = 26 \text{ m}$$

$$\text{Breadth} = 20 - 2 \times 2 = 16 \text{ m}$$

$$\text{Dimensions: } 26 \text{ m} \times 16 \text{ m}$$

(c) Area of walking path:

$$\text{Area of garden} = 30 \times 20 = 600 \text{ sq m}$$

Area of inner rectangle = $26 \times 16 = 416$ sq m

Area of path = $600 - 416 = 184$ sq m

(d) Cost of planting grass:

Cost = $416 \times 20 = ₹8320$

Answers: (a) 100 m, (b) $26 \text{ m} \times 16 \text{ m}$, (c) 184 sq m, (d) ₹8320

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