

Perimeter, Area, Volume and Data Handling

Mathematics · Class 5 · Topic-wise Practice Worksheet

TIME 45 minutes	QUESTIONS 18	TOTAL MARKS 24	MAX. SCORE ____ / 24
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Name: _____ Class/Sec: _____ Date: _____

INSTRUCTIONS

- There are **18 questions** in this worksheet. All questions are compulsory.
- Each question has four options (A), (B), (C) and (D). Exactly **one** option is correct.
- Questions 1–15 carry **1 mark** each. Questions 16–18 (Achievers Section) carry **3 marks** each.
- There is no negative marking. Use of a calculator is **not** allowed.
- Read every graph carefully. Figures are not drawn to scale.

Section A — Mathematical Reasoning

Q1–Q8 · 1 mark each

- The perimeter of a rectangle of length 18 m and breadth 12 m is _____.
 (A) 60 m (B) 30 m
 (C) 108 m (D) 216 m
- The area of a square of side 13 cm is _____.
 (A) 26 cm² (B) 52 cm²
 (C) 169 cm (D) 169 cm²
- The volume of a cube of side 6 cm is _____.
 (A) 216 cm³ (B) 72 cm³
 (C) 36 cm³ (D) 18 cm³
- The volume of a cuboid measuring 8 cm by 5 cm by 4 cm is _____.
 (A) 17 cm³ (B) 80 cm³
 (C) 160 cm³ (D) 184 cm³
- 1 square metre is equal to _____ square centimetres.
 (A) 100 (B) 1,000
 (C) 1,00,000 (D) 10,000
- The average of 12, 18, 24 and 26 is _____.
 (A) 18 (B) 20
 (C) 22 (D) 80
- The perimeter of a square of side 9 m is _____.
 (A) 36 m (B) 27 m
 (C) 18 m (D) 81 m
- 1 litre of water occupies a volume of _____.
 (A) 10 cm³ (B) 100 cm³
 (C) 1,000 cm³ (D) 10,000 cm³

9. The bar graph shows the rainfall recorded in a town over four months. In which month was the rainfall **closest to 60 mm**?

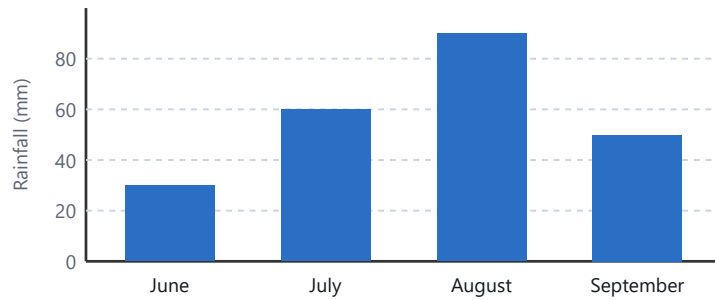


Fig. 9.1 — Monthly rainfall

- (A) June
(B) September
(C) August
(D) July
10. Using the same bar graph, what was the **total** rainfall over the four months?
- (A) 230 mm
(B) 220 mm
(C) 210 mm
(D) 240 mm
11. Find the perimeter of the L-shaped figure shown.

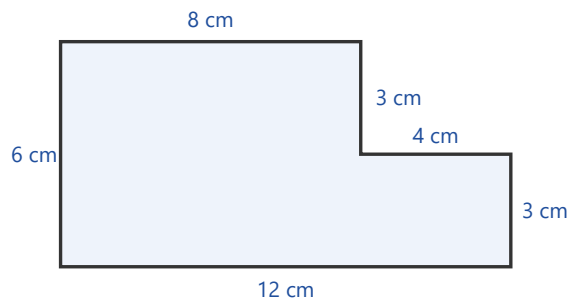


Fig. 11.1

- (A) 30 cm
(B) 36 cm
(C) 33 cm
(D) 40 cm
12. A rectangular hall is 15 m long and 9 m wide. What is the cost of carpeting it at ₹120 per square metre?
- (A) ₹5,760
(B) ₹1,620
(C) ₹16,200
(D) ₹18,000
13. A cubical tank of side 1 m is filled with water. How many litres does it hold?
- (A) 100 litres
(B) 1,00,000 litres
(C) 10,000 litres
(D) 1,000 litres
14. The average of five numbers is 24. What is their total?
- (A) 96
(B) 110
(C) 120
(D) 144
15. How many small cubes of side 2 cm can be packed into a box measuring 8 cm by 6 cm by 4 cm?
- (A) 12
(B) 24
(C) 36
(D) 48

16. Consider the following statements.

- (i) Two rectangles with the same perimeter must have the same area.
- (ii) If the side of a cube is doubled, its volume becomes 8 times as large.
- (iii) The average of a set of numbers always lies between the smallest and the largest of them.

Which of the statements is/are correct?

- | | |
|------------------------|-------------------------|
| (A) (i) and (ii) only | (B) (ii) and (iii) only |
| (C) (i) and (iii) only | (D) All three |

17. The perimeter of a rectangle is 64 cm and its length is 20 cm. What is its area?

- | | |
|------------------------|------------------------|
| (A) 240 cm^2 | (B) 180 cm^2 |
| (C) 120 cm^2 | (D) 280 cm^2 |

18. A square garden of side 20 m has a path 1 m wide running all around it on the **inside**. What is the area of the path?

- | | |
|----------------------|-----------------------|
| (A) 80 m^2 | (B) 76 m^2 |
| (C) 84 m^2 | (D) 324 m^2 |

Answer Key

1	A	2	D	3	A	4	C	5	D
6	B	7	A	8	C	9	D	10	A
11	B	12	C	13	D	14	C	15	B
16	B	17	A	18	B				

Solutions

1. Answer: (A) 60 m

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

2. Answer: (D) 169 cm^2

Area of a square = side $\times$ side = $13 \times 13 = \mathbf{169 \text{ cm}^2}$. Area is always measured in *square* units.

3. Answer: (A) 216 cm^3

Volume of a cube = side $\times$ side $\times$ side = $6 \times 6 \times 6 = \mathbf{216 \text{ cm}^3}$.

4. Answer: (C) 160 cm^3

Volume of a cuboid = length $\times$ breadth $\times$ height
 $= 8 \times 5 \times 4 = \mathbf{160 \text{ cm}^3}$.

5. Answer: (D) 10,000

1 m = 100 cm, so $1 \text{ m}^2 = 100 \text{ cm} \times 100 \text{ cm} = \mathbf{10,000 \text{ cm}^2}$.

6. Answer: (B) 20

Average = sum $\div$ number of values
 $= (12 + 18 + 24 + 26) \div 4 = 80 \div 4 = \mathbf{20}$.

7. Answer: (A) 36 m

A square has 4 equal sides.
Perimeter = $4 \times 9 = \mathbf{36 \text{ m}}$.

8. Answer: (C) $1,000 \text{ cm}^3$

1 litre = $\mathbf{1,000 \text{ cm}^3}$. So 1 m^3 , which is $10,00,000 \text{ cm}^3$, holds 1,000 litres.

9. Answer: (D) July

Reading the bars against the scale: June 30 mm, July 60 mm, August 90 mm, September 50 mm.
The bar for **July** reaches exactly the 60 mm line.

10. Answer: (A) 230 mm

Add the four bars: $30 + 60 + 90 + 50 = \mathbf{230 \text{ mm}}$.

11. Answer: (B) 36 cm

Go right round the boundary, adding every side:
 $8 + 3 + 4 + 3 + 12 + 6 = \mathbf{36 \text{ cm}}$.
(Check that it closes: across, $8 + 4 = 12 \checkmark$; down, $3 + 3 = 6 \checkmark$.)

12. Answer: (C) ₹16,200

Area = $15 \times 9 = 135 \text{ m}^2$.
Cost = $135 \times 120 = \mathbf{₹16,200}$.

13. Answer: (D) 1,000 litres

Volume = $1 \text{ m} \times 1 \text{ m} \times 1 \text{ m} = 1 \text{ m}^3$.
Since $1 \text{ m}^3 = 1,000 \text{ litres}$, the tank holds $\mathbf{1,000 \text{ litres}}$.

14. Answer: (C) 120

Average = total $\div$ number of values, so total = average $\times$ number of values.
Total = $24 \times 5 = \mathbf{120}$.

15. Answer: (B) 24

Along the length: $8 \div 2 = 4$ cubes.

Along the breadth: $6 \div 2 = 3$ cubes.

Along the height: $4 \div 2 = 2$ cubes.

Total = $4 \times 3 \times 2 = \mathbf{24}$ cubes.

(Check by volume: $192 \div 8 = 24$. ✓)

16. Answer: (B) (ii) and (iii) only

Statement (i) is false — a 1×7 rectangle and a 4×4 square both have a perimeter of 16, yet their areas are 7 and 16.

Statement (ii) is true; volume = side³, so doubling the side multiplies the volume by $2^3 = 8$. Statement (iii) is true. Hence **(ii) and (iii)**.

17. Answer: (A) 240 cm²

Perimeter = $2 \times (\text{length} + \text{breadth})$, so length + breadth = $64 \div 2 = 32$ cm.

Breadth = $32 - 20 = 12$ cm.

Area = $20 \times 12 = \mathbf{240 \text{ cm}^2}$.

18. Answer: (B) 76 m²

Area of the whole garden = $20 \times 20 = 400 \text{ m}^2$.

The path takes 1 m off each side, so the inner square has side $20 - 2 = 18$ m.

Inner area = $18 \times 18 = 324 \text{ m}^2$.

Area of the path = $400 - 324 = \mathbf{76 \text{ m}^2}$.