

Geometry, Mensuration and Data Handling

Mathematics · Class 6 · 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

- How many line segments can be drawn through two distinct points?
 (A) One (B) Two
 (C) Infinitely many (D) None
- An angle whose measure is more than 180° but less than 360° is called a _____ angle.
 (A) Acute (B) Obtuse
 (C) Straight (D) Reflex
- A triangle with one angle of 90° is called a _____ triangle.
 (A) Right-angled (B) Acute-angled
 (C) Obtuse-angled (D) Equilateral
- How many faces does a triangular pyramid (tetrahedron) have?
 (A) 3 (B) 4
 (C) 5 (D) 6
- The perimeter of a regular pentagon of side 9 cm is _____.
 (A) 36 cm (B) 54 cm
 (C) 45 cm (D) 81 cm
- The area of a rectangle 15 m long and 8 m wide is _____.
 (A) 23 m^2 (B) 46 m^2
 (C) 120 m (D) 120 m^2
- The mean of 8, 12, 15, 20 and 25 is _____.
 (A) 15 (B) 16
 (C) 18 (D) 80
- How many lines of symmetry does a regular hexagon have?
 (A) 3 (B) 4
 (C) 6 (D) 12

9. The bar graph shows the number of books borrowed from a library in four weeks. In which week were **exactly 40** books borrowed?

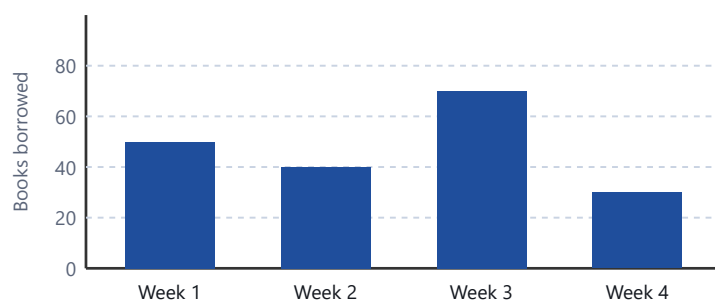


Fig. 9.1 — Books borrowed each week

- (A) Week 2
(B) Week 1
(C) Week 3
(D) Week 4
10. Using the same bar graph, what was the **mean** number of books borrowed per week?
- (A) 45
(B) 48
(C) 47.5
(D) 50
11. Two angles of a triangle measure 48° and 72° . What kind of triangle is it?
- (A) Right-angled
(B) Obtuse-angled
(C) Equilateral
(D) Acute-angled
12. A rectangular field 40 m by 25 m is to be fenced with 3 rounds of wire. What total length of wire is needed?
- (A) 390 m
(B) 260 m
(C) 130 m
(D) 3,000 m
13. A wire of length 44 cm is bent to form a square. What is the area of the square?
- (A) 11 cm^2
(B) 44 cm^2
(C) 121 cm^2
(D) $1,936 \text{ cm}^2$
14. In the tally table below, how many students scored **more than** 20 marks?

Marks	10	15	20	25	30
Number of students	3	6	8	5	2

Table 14.1 — Marks scored by 24 students

- (A) 5
(B) 7
(C) 13
(D) 15
15. The mean of five numbers is 18. If four of them are 12, 15, 20 and 24, what is the fifth number?
- (A) 17
(B) 19
(C) 21
(D) 23

16. Consider the following statements.

- (i) A triangle can have at most one right angle.
- (ii) Two rectangles with equal areas must have equal perimeters.
- (iii) The mean of a set of numbers can equal one of the numbers in the set.

Which of the statements is/are correct?

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

17. The length of a rectangle is twice its breadth and its perimeter is 72 cm. What is its area?

- | | |
|------------------------|------------------------|
| (A) 144 cm^2 | (B) 216 cm^2 |
| (C) 432 cm^2 | (D) 288 cm^2 |

18. A rectangular sheet 24 cm by 18 cm is cut into the largest possible identical squares, with nothing wasted. How many squares are obtained?

- | | |
|--------|--------|
| (A) 6 | (B) 12 |
| (C) 24 | (D) 36 |

Answer Key

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

Solutions

1. Answer: (A) One

Exactly **one** line segment joins two given points. (Infinitely many lines pass through a single point, but two points fix the segment completely.)

2. Answer: (D) Reflex

A **reflex** angle is more than 180° but less than a full turn of 360° .

3. Answer: (A) Right-angled

A **right-angled** triangle has exactly one angle of 90° . An equilateral triangle has three 60° angles, so it can never be right-angled.

4. Answer: (B) 4

A triangular pyramid has a triangular base and three triangular sides, making **4** faces in all. It also has 6 edges and 4 vertices.

5. Answer: (C) 45 cm

A regular pentagon has 5 equal sides.

Perimeter = $5 \times 9 = \mathbf{45 \text{ cm}}$.

6. Answer: (D) 120 m^2

Area = length $\times$ breadth = $15 \times 8 = \mathbf{120 \text{ m}^2}$.

7. Answer: (B) 16

Mean = sum $\div$ number of values

= $(8 + 12 + 15 + 20 + 25) \div 5 = 80 \div 5 = \mathbf{16}$.

8. Answer: (C) 6

A regular hexagon has **6** lines of symmetry — three through opposite vertices and three through the midpoints of opposite sides. In general, a regular polygon with n sides has n lines of symmetry.

9. Answer: (A) Week 2

Reading the bars against the scale: Week 1 is 50, Week 2 is 40, Week 3 is 70 and Week 4 is 30.

The bar for **Week 2** reaches exactly the 40 line.

10. Answer: (C) 47.5

Total = $50 + 40 + 70 + 30 = 190$ books.

Mean = $190 \div 4 = \mathbf{47.5}$ books per week.

11. Answer: (D) Acute-angled

Third angle = $180^\circ - (48^\circ + 72^\circ) = 60^\circ$.

The three angles are 48° , 72° and 60° , all less than 90° , so it is an **acute-angled** triangle.

12. Answer: (A) 390 m

Perimeter = $2 \times (40 + 25) = 2 \times 65 = 130 \text{ m}$ for one round.

For 3 rounds = $3 \times 130 = \mathbf{390 \text{ m}}$.

13. Answer: (C) 121 cm^2

The wire becomes the perimeter, so side = $44 \div 4 = 11 \text{ cm}$.

Area = $11 \times 11 = \mathbf{121 \text{ cm}^2}$.

14. Answer: (B) 7

'More than 20' means the 25 and 30 columns only.

$5 + 2 = \mathbf{7}$ students. (The 8 students who scored exactly 20 are not counted.)

15. Answer: (B) 19

Total of all five = mean $\times$ count = $18 \times 5 = 90$.

Sum of the four given = $12 + 15 + 20 + 24 = 71$.

Fifth number = $90 - 71 = 19$.

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

Statement (i) is true — two right angles would already use 180° . Statement (ii) is false; a 2×18 rectangle and a 6×6 square both have area 36 but perimeters of 40 and 24. Statement (iii) is true; the mean of 4, 6 and 8 is 6, which is in the set. Hence **(i) and (iii)**.

17. Answer: (D) 288 cm^2

Let the breadth be b , so the length is $2b$.

Perimeter = $2(2b + b) = 6b = 72$, so $b = 12 \text{ cm}$ and the length is 24 cm .

Area = $24 \times 12 = 288 \text{ cm}^2$.

18. Answer: (B) 12

The largest square side is the HCF of 24 and 18, which is 6 cm.

Along the length: $24 \div 6 = 4$ squares.

Along the breadth: $18 \div 6 = 3$ squares.

Total = $4 \times 3 = 12$ squares.