

Geometry — Angles, Shapes and Symmetry

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.
- Figures are not drawn to scale.

Section A — Mathematical Reasoning

Q1–Q8 · 1 mark each

- An angle that measures less than 90° is called a/an ____ angle.

(A) Acute	(B) Right
(C) Obtuse	(D) Reflex
- One complete turn measures _____.

(A) 90°	(B) 180°
(C) 270°	(D) 360°
- The sum of the three angles of any triangle is _____.

(A) 180°	(B) 90°
(C) 270°	(D) 360°
- Two lines in the same plane that never meet, however far they are extended, are called ____ lines.

(A) Perpendicular	(B) Curved
(C) Intersecting	(D) Parallel
- If the diameter of a circle is 14 cm, its radius is _____.

(A) 7 cm	(B) 14 cm
(C) 28 cm	(D) 3.5 cm
- A triangle in which all three sides are equal is called _____.

(A) Scalene	(B) Equilateral
(C) Isosceles	(D) Right-angled
- How many lines of symmetry does a rectangle have?

(A) 1	(B) 4
(C) 2	(D) Infinitely many
- An angle of exactly 180° is called a ____ angle.

(A) Right	(B) Obtuse
(C) Complete	(D) Straight

9. Four angles are shown below. Which one is an **obtuse** angle?

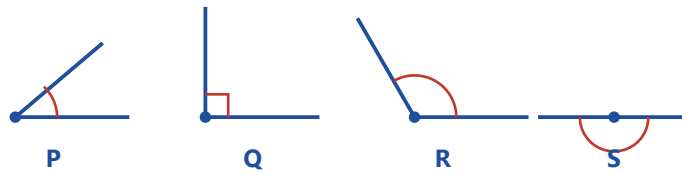


Fig. 9.1 — Four angles

- (A) P (B) Q
(C) R (D) S
10. Two angles of a triangle measure 65° and 45° . The third angle is ____.
- (A) 70° (B) 60°
(C) 80° (D) 110°
11. In the circle shown, O is the centre. Which labelled line is the **diameter**?

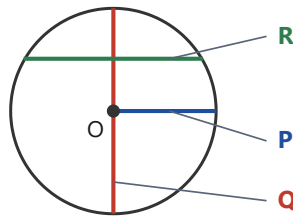


Fig. 11.1 — A circle with centre O

- (A) P (B) Q
(C) R (D) None of these
12. How many lines of symmetry does an equilateral triangle have?
- (A) 1 (B) 2
(C) 3 (D) 6
13. In the figure, AOB is a straight line and one angle is 120° . What is the value of x?

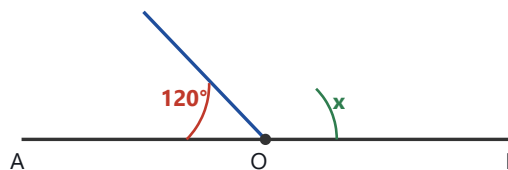


Fig. 13.1

- (A) 30° (B) 60°
(C) 80° (D) 120°
14. Which quadrilateral has all four sides equal **and** all four angles right angles?
- (A) Rectangle (B) Rhombus
(C) Square (D) Trapezium
15. At 9 o'clock, the hands of a clock form a/an ____ angle.
- (A) Acute (B) Straight
(C) Obtuse (D) Right

16. Consider the following statements.

- (i) A circle has infinitely many lines of symmetry.
- (ii) A triangle can have two right angles.
- (iii) The diameter is the longest chord of a circle.

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 three angles of a triangle are in the ratio 1 : 2 : 3. What is the largest angle?

- | | |
|----------------|-----------------|
| (A) 90° | (B) 60° |
| (C) 30° | (D) 120° |

18. Three angles meet at a point and measure 100° , 130° and y . What is the value of y ?

- | | |
|----------------|-----------------|
| (A) 50° | (B) 130° |
| (C) 80° | (D) 230° |

Answer Key

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

Solutions

1. Answer: (A) Acute

An **acute** angle is less than 90° . A right angle is exactly 90° , an obtuse angle is between 90° and 180° , and a reflex angle is more than 180° .

2. Answer: (D) 360°

A full turn all the way round is **360°** . Half a turn is 180° and a quarter turn is 90° .

3. Answer: (A) 180°

The three angles of any triangle always add up to **180°** , whatever its shape or size.

4. Answer: (D) Parallel

Parallel lines stay the same distance apart and never meet — like the two rails of a railway track. Perpendicular lines meet at 90° .

5. Answer: (A) 7 cm

The radius is always half the diameter.

Radius = $14 \div 2 = \mathbf{7 \text{ cm}}$.

6. Answer: (B) Equilateral

An **equilateral** triangle has three equal sides and three equal angles of 60° each. An isosceles triangle has two equal sides and a scalene triangle has none.

7. Answer: (C) 2

A rectangle can be folded down the middle vertically and across the middle horizontally — that is **2** lines of symmetry. Its diagonals are *not* lines of symmetry, though a square's are.

8. Answer: (D) Straight

A **straight** angle is a half turn, 180° , and its two arms form a straight line.

9. Answer: (C) R

An obtuse angle is more than 90° but less than 180° . **R** opens wider than a right angle but is not a straight line. P is acute, Q is a right angle (marked with a small square) and S is a straight angle of 180° .

10. Answer: (A) 70°

The three angles add up to 180° .

Third angle = $180^\circ - (65^\circ + 45^\circ) = 180^\circ - 110^\circ = \mathbf{70^\circ}$.

11. Answer: (B) Q

A diameter is a straight line through the **centre** with both ends on the circle. **Q** passes through O and touches the circle at both ends. P is a radius (centre to circle) and R is a chord, which joins two points on the circle but misses the centre.

12. Answer: (C) 3

An equilateral triangle can be folded in **3** ways — one fold through each corner down to the middle of the opposite side.

13. Answer: (B) 60°

Angles on a straight line add up to 180° .

$x = 180^\circ - 120^\circ = \mathbf{60^\circ}$.

14. Answer: (C) Square

A **square** has both properties. A rectangle has right angles but unequal sides, and a rhombus has equal sides but not usually right angles.

15. Answer: (D) Right

At 9 o'clock the minute hand points to 12 and the hour hand to 9, which is a quarter turn — exactly 90° . That is a **right** angle.

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

Statement (i) is true — any line through the centre folds a circle onto itself. Statement (ii) is false; two right angles already use up 180° , leaving nothing for the third angle. Statement (iii) is true; every chord is shorter than the one that passes through the centre. Hence **(i) and (iii)**.

17. Answer: (A) 90°

Let the angles be x , $2x$ and $3x$.

$$x + 2x + 3x = 180^\circ$$

$$6x = 180^\circ, \text{ so } x = 30^\circ.$$

The largest angle is $3x = 3 \times 30^\circ = \mathbf{90^\circ}$. (So it is a right-angled triangle with angles 30° , 60° and 90° .)

18. Answer: (B) 130°

Angles that meet at a point make one complete turn, so they add up to 360° .

$$y = 360^\circ - (100^\circ + 130^\circ) = 360^\circ - 230^\circ = \mathbf{130^\circ}.$$