



CLASS 9 MATHEMATICS



CHAPTER 6 – MEASURING SPACE: PERIMETER AND AREA



MCQ WORKSHEET | Ganita Manjari | 2026–27

Name: _____

Class: IX Section: _____

Date: _____



Instructions

- Choose the **one correct answer**.
 - Attempt all questions.
 - Use $\pi = 22/7$ wherever required.
 - **Total: 45 MCQs**
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PART A – PERIMETER & BASIC FORMULAS

1. The perimeter of a closed plane figure is:

- A. The space inside the figure
- B. The total length of its boundary
- C. Its longest side
- D. Its diagonal

2. The perimeter of a square of side **a** is:

- A. a^2
- B. $2a$
- C. $3a$
- D. $4a$

3. The perimeter of a rectangle with length l and breadth b is:

- A. $l + b$
- B. $2(l+b)$
- C. lb
- D. $2lb$

4. A square has side 9 cm. Its perimeter is:

- A. 18 cm
- B. 27 cm
- C. 36 cm
- D. 81 cm

5. A rectangle is 12 cm long and 7 cm wide. Its perimeter is:

- A. 19 cm
- B. 38 cm
- C. 84 cm
- D. 42 cm

6. If the perimeter of a square is 48 cm, its side is:

- A. 8 cm
- B. 10 cm
- C. 12 cm
- D. 16 cm

7. If the length of a rectangle is 15 cm and its breadth is 5 cm, its perimeter is:

- A. 20 cm
- B. 30 cm
- C. 40 cm
- D. 75 cm

PART B – CIRCUMFERENCE & CIRCLE

8. The circumference of a circle of radius r is:

- A. πr^2
- B. πr
- C. $2\pi r$
- D. $2\pi r^2$

9. The circumference of a circle with diameter d is:

- A. πd
- B. $2\pi d$
- C. πd^2
- D. d/π

10. The circumference of a circle of radius 7 cm, using $\pi = 22/7$, is:

- A. 22 cm
- B. 44 cm
- C. 49 cm
- D. 154 cm

11. A circle has diameter 14 cm. Its circumference is:

- A. 22 cm
- B. 44 cm
- C. 88 cm
- D. 154 cm

12. If the radius of a circle is doubled, its circumference becomes:

- A. Half
- B. Double
- C. Four times
- D. Unchanged

13. The constant ratio of circumference to diameter is:

- A. 2
 - B. 3
 - C. π
 - D. 22
-

PART C – ARC LENGTH

14. The length of an arc subtending θ° at the centre of a circle of radius r is:

- A. $(\theta/360) \times \pi r^2$
- B. $(\theta/360) \times 2\pi r$
- C. $(\theta/180) \times \pi r^2$
- D. $2\pi r^2$

15. A semicircle is an arc corresponding to:

- A. 45°
- B. 90°
- C. 180°
- D. 360°

16. The length of a quarter-circle arc of radius 14 cm is:

- A. 11 cm
- B. 22 cm
- C. 44 cm
- D. 88 cm

17. An arc subtends 60° at the centre. It represents:

- A. $1/2$ of the circumference
 - B. $1/3$ of the circumference
 - C. $1/4$ of the circumference
 - D. $1/6$ of the circumference
-

PART D – AREA OF PLANE FIGURES

18. The area of a rectangle is:

- A. $l+b$
- B. $2(l+b)$

- C. $1b$
- D. $1/b$

19. The area of a square of side a is:

- A. $2a$
- B. $3a$
- C. $4a$
- D. a^2

20. The area of a parallelogram is:

- A. $\text{base} + \text{height}$
- B. $\text{base} \times \text{height}$
- C. $1/2 \times \text{base} \times \text{height}$
- D. $2(\text{base} + \text{height})$

21. The area of a triangle is:

- A. bh
- B. $2bh$
- C. $1/2 bh$
- D. $b+h$

22. A triangle has base 12 cm and height 8 cm. Its area is:

- A. 20 cm^2
- B. 48 cm^2
- C. 96 cm^2
- D. 192 cm^2

23. A parallelogram has base 15 cm and height 6 cm. Its area is:

- A. 21 cm^2
- B. 45 cm^2
- C. 90 cm^2
- D. 180 cm^2

24. A rectangle has length 20 cm and breadth 8 cm. Its area is:

- A. 28 cm^2
- B. 56 cm^2

- C. 160 cm^2
 - D. 320 cm^2
-

PART E – HERON'S FORMULA

25. Heron's formula is used to find the area of a triangle when:

- A. Only its height is known
- B. Its three sides are known
- C. Only its base is known
- D. Only its perimeter is known

26. The semi-perimeter of a triangle with sides a , b , c is:

- A. $a+b+c$
- B. $2(a+b+c)$
- C. $(a+b+c)/2$
- D. $abc/2$

27. Heron's formula is:

- A. $\sqrt{s(s-a)(s-b)(s-c)}$
- B. $s(s+a)(s+b)(s+c)$
- C. $\sqrt{abc}$
- D. $1/2 bh$

28. The sides of a triangle are 3 cm, 4 cm and 5 cm. Its semi-perimeter is:

- A. 5 cm
- B. 6 cm
- C. 7 cm
- D. 12 cm

29. The area of a 3 cm, 4 cm, 5 cm triangle is:

- A. 5 cm^2
- B. 6 cm^2
- C. 10 cm^2
- D. 12 cm^2

30. A triangle has sides 5 cm, 12 cm and 13 cm. Its area is:

- A. 20 cm^2
 - B. 30 cm^2
 - C. 60 cm^2
 - D. 78 cm^2
-

PART F – AREA OF A CIRCLE

31. The area of a circle of radius r is:

- A. $2\pi r$
- B. πr
- C. πr^2
- D. $2\pi r^2$

32. The area of a circle with radius 7 cm is:

- A. 44 cm^2
- B. 154 cm^2
- C. 308 cm^2
- D. 49 cm^2

33. If the radius of a circle is doubled, its area becomes:

- A. 2 times
- B. 3 times
- C. 4 times
- D. 8 times

34. A circle has diameter 14 cm. Its area is:

- A. 44 cm^2
 - B. 77 cm^2
 - C. 154 cm^2
 - D. 616 cm^2
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PART G – SECTOR & SEGMENT

35. The area of a sector of angle θ° and radius r is:

- A. $(\theta/360) \times \pi r^2$
- B. $(\theta/360) \times 2\pi r$
- C. $2\pi r^2$
- D. πr

36. The area of a semicircular sector of radius r is:

- A. πr^2
- B. $1/2 \pi r^2$
- C. $2\pi r^2$
- D. $1/4 \pi r^2$

37. The area of a quadrant of a circle of radius r is:

- A. πr^2
- B. $1/2\pi r^2$
- C. $1/4\pi r^2$
- D. $2\pi r^2$

38. The area of a minor segment is found by:

- A. Area of sector + area of triangle
- B. Area of sector – area of triangle
- C. Area of circle + area of sector
- D. Area of triangle – area of sector

PART H – BRAHMAGUPTA'S FORMULA & APPLICATIONS

39. Brahmagupta's formula is used for finding the area of a:

- A. Triangle
- B. Circle
- C. Cyclic quadrilateral
- D. Rectangle

40. For a cyclic quadrilateral with sides a , b , c , d , its semi-perimeter is:

- A. $(a+b+c+d)/2$
- B. $a+b+c+d$
- C. $abcd/2$
- D. $2(a+b+c+d)$

41. Brahmagupta's formula is:

- A. $\sqrt{s(s-a)(s-b)(s-c)}$
- B. $\sqrt{(s-a)(s-b)(s-c)(s-d)}$
- C. $1/2bh$
- D. πr^2

42. A cyclic quadrilateral has sides 5 cm, 6 cm, 7 cm and 8 cm. Its semi-perimeter is:

- A. 10 cm
- B. 12 cm
- C. 13 cm
- D. 26 cm

43. Which unit is appropriate for measuring the area of a classroom floor?

- A. cm
- B. m
- C. m^2
- D. m^3

44. Which unit is appropriate for measuring the perimeter of a rectangular field?

- A. m
- B. m^2
- C. m^3
- D. cm^2

45. A bicycle wheel makes one complete revolution. The distance travelled by the bicycle is equal to the:

- A. Radius of the wheel
 - B. Diameter of the wheel
 - C. Circumference of the wheel
 - D. Area of the wheel
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ANSWER KEY

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	B	10	B	19	D	28	B	37	C
2	D	11	B	20	B	29	B	38	B
3	B	12	B	21	C	30	C	39	C
4	C	13	C	22	B	31	C	40	A
5	B	14	B	23	C	32	B	41	B
6	C	15	C	24	C	33	C	42	C
7	C	16	B	25	B	34	C	43	C
8	C	17	D	26	C	35	A	44	A
9	A	18	C	27	A	36	B	45	C



CHAPTER 6 QUICK REVISION



Perimeter

Square:

$$P = 4a$$

Rectangle:

$$P = 2(l+b)$$

Circle

Circumference:

$$C = 2\pi r = \pi d$$

Area:

$$A = \pi r^2$$

Arc

$$\text{Arc length} = (\theta/360^\circ) \times 2\pi r$$

Triangle

$$\text{Area} = 1/2 \times \text{base} \times \text{height}$$

Parallelogram

$$\text{Area} = \text{base} \times \text{height}$$

Heron's Formula

$$s = (a+b+c)/2$$

$$\text{Area} = \sqrt{s(s-a)(s-b)(s-c)}$$

Sector

$$\text{Area} = (\theta/360^\circ) \times \pi r^2$$

Segment

$$\text{Area of segment} = \text{Area of sector} - \text{Area of triangle}$$

Brahmagupta's Formula

For a cyclic quadrilateral:

$$s = (a+b+c+d)/2$$

$$\text{Area} = \sqrt{(s-a)(s-b)(s-c)(s-d)}$$



SCORE

40–45: 🌟 Perimeter & Area Master!

34–39: 🏆 Excellent!

27–33: 👍 Very Good!

20–26: 📖 Revise the formulas!

Below 20: 💪 Practise Chapter 6 again!