# SSC GD Constable Exam: Geometry MCQ

**Instructions**:
- This practice set contains 100 multiple-choice questions (MCQs) on Geometry, covering lines and angles, triangles, quadrilaterals, circles, mensuration, and coordinate geometry.
- Each question carries 2 marks. There is a negative marking of 0.50 marks for each incorrect answer, as per the latest SSC GD exam pattern.
- Questions are divided into 20% low level (basic), 60% medium level (moderate), and 20% high level (complex), aligned with the SSC GD syllabus for Elementary Mathematics at the 10th-grade level.
- Answers are provided with concise explanations for clarity.

## Section 1: Lines, Angles, and Triangles (Questions 1–50)

Low Level Questions (Q1–10, 20% of Section)

1. What is the sum of all interior angles of a triangle?
   A) 180°
   B) 360°
   C) 90°
   D) 270°
   Answer: A
   Explanation: The sum of the interior angles of a triangle is always 180°. This is a fundamental property of triangles in Euclidean geometry.

2. If one angle of a triangle is 50° and another is 60°, what is the third angle?
   A) 70°
   B) 80°
   C) 90°
   D) 60°
   Answer: A
   Explanation: Sum of angles in a triangle = 180°. Third angle = 180° – 50° – 60° = 70°.

3. What is the measure of each interior angle of an equilateral triangle?
A) 60°
B) 90°
C) 120°
D) 45°
Answer: A
Explanation: In an equilateral triangle, all angles are equal, and their sum is 180°. Each angle = 180°/3 = 60°.

4. If two angles of a triangle are equal and each is 40°, what is the third angle?
A) 80°
B) 100°
C) 70°
D) 90°
Answer: B
Explanation: Sum of angles = 180°. Two angles = 40° + 40° = 80°. Third angle = 180° – 80° = 100°.

5. What is the sum of angles on a straight line?
A) 180°
B) 360°
C) 90°
D) 270°
Answer: A
Explanation: Angles on a straight line form a linear pair and sum to 180°, a basic property of Euclidean geometry.

6. If an angle is 30°, what is its complementary angle?
A) 70°
B) 90°
C) 150°
D) 60°
Answer: D

Explanation: Complementary angles sum to 90°. Complementary angle = 90° – 30° = 60°.

7. What is the exterior angle of a triangle if its opposite interior angles are 40° and 50°?
A) 70°
B) 80°
C) 90°
D) 100°
Answer: C
Explanation: Exterior angle of a triangle equals the sum of opposite interior angles. Exterior angle = 40° + 50° = 90°.

8. If two angles of a triangle are 45° and 55°, what is the third angle?
A) 80°
B) 90°
C) 70°
D) 100°
Answer: A
Explanation: Sum of angles = 180°. Third angle = 180° – 45° – 55° = 80°.

9. What is the measure of each interior angle of a square?
A) 90°
B) 60°
C) 120°
D) 45°
Answer: A
Explanation: A square has four equal right angles. Each angle = 90°.

10. If an angle is 120°, what is its supplementary angle?
A) 60°
B) 90°
C) 120°
D) 180°
Answer: A

Explanation: Supplementary angles sum to 180°. Supplementary angle = 180° – 120° = 60°.

**Medium Level Questions (Q11–40, 60% of Section)**

11. In a triangle ABC, ∠A = 70° and ∠B = 50°. What is ∠C?

A) 60°

B) 80°

C) 90°

D) 100°

Answer: A

Explanation: Sum of angles in a triangle = 180°. ∠C = 180° – 70° – 50° = 60°.

12. In an isosceles triangle, one angle is 100°. What is each of the equal angles?

A) 70°

B) 50°

C) 60°

D) 40°

Answer: D

Explanation: In an isosceles triangle, two angles are equal. If one angle is 100°, sum of equal angles = 180° – 100° = 80°. Each equal angle = 80°/2 = 40°.

13. If the exterior angle of a triangle is 110° and one opposite interior angle is 40°, what is the other?

A) 60°

B) 70°

C) 80°

D) 90°

Answer: B

Explanation: Exterior angle = sum of opposite interior angles. Other interior angle = 110° – 40° = 70°.

14. In a right-angled triangle, one acute angle is 30°. What is the other acute angle?

A) 60°

B) 45°

C) 90°

D) 75°

Answer: A

Explanation: In a right-angled triangle, one angle = 90°. Sum of acute angles = 180° – 90° = 90°. Other acute angle = 90° – 30° = 60°.

15. If the angles of a triangle are in the ratio 2:3:4, what is the largest angle?

A) 80°

B) 90°

C) 100°

D) 120°

Answer: A

Explanation: Let angles be 2x, 3x, 4x. Sum = 2x + 3x + 4x = 9x = 180°, x = 20°. Largest angle = 4x = 4 × 20° = 80°.

16. In a triangle, one angle is twice another, and the third angle is 60°. What is the smallest angle?

A) 20°

B) 30°

C) 40°

D) 50°

Answer: C

Explanation: Let angles be x, 2x, 60°. Sum = x + 2x + 60° = 180°, 3x = 120°, x = 40°. Angles: 40°, 80°, 60°. Smallest = 40°

17. If two angles of a triangle are 50° and 70°, what is the exterior angle at the third vertex?

A) 120°

B) 130°

C) 140°

D) 150°
Answer: A
Explanation: Third angle = 180° – 50° – 70° = 60°. Exterior angle = sum of opposite interior angles = 50° + 70° = 120°.

18. In a parallelogram, one angle is 70°. What is the adjacent angle?
A) 110°
B) 100°
C) 90°
D) 120°
Answer: A
Explanation: In a parallelogram, adjacent angles are supplementary. Adjacent angle = 180° – 70° = 110°.

19. If the base angles of an isosceles triangle are 65° each, what is the vertex angle?
A) 40°
B) 50°
C) 60°
D) 70°
Answer: B
Explanation: Sum of angles = 180°. Vertex angle = 180° – 65° – 65° = 50°.

20. In a triangle, the angles are in the ratio 1:2:3. What is the largest angle?
A) 90°
B) 100°
C) 120°
D) 150°
Answer: A
Explanation: Let angles be x, 2x, 3x. Sum = x + 2x + 3x = 6x = 180°, x = 30°. Largest angle = 3x = 3 × 30° = 90°.

21. If the exterior angle of a triangle is 140° and one opposite interior angle is 60°, what is the other?

A) 70°
B) 80°
C) 90°
D) 100°
Answer: B
Explanation: Exterior angle = sum of opposite interior angles. Other interior angle = 140° – 60° = 80°.

22. In a right-angled triangle, one acute angle is 45°. What is the other acute angle?
A) 45°
B) 60°
C) 75°
D) 90°
Answer: A
Explanation: Sum of acute angles = 90°. Other acute angle = 90° – 45° = 45°.

23. If the angles of a quadrilateral are in the ratio 1:2:3:4, what is the largest angle?
A) 144°
B) 108°
C) 90°
D) 72°
Answer: A
Explanation: Let angles be x, 2x, 3x, 4x. Sum = 10x = 360°, x = 36°. Largest angle = 4x = 4 × 36° = 144°.

24. In a triangle ABC, ∠A = 80° and ∠B = 40°. What is the exterior angle at C?
A) 120°
B) 130°
C) 140°
D) 150°
Answer: A

Explanation: ∠C = 180° – 80° – 40° = 60°. Exterior angle at C = 80° + 40° = 120°.

25. If two parallel lines are cut by a transversal, what is the measure of an alternate interior angle to a 70° angle?

A) 70°

B) 110°

C) 90°

D) 180°

Answer: A

Explanation: Alternate interior angles are equal when parallel lines are cut by a transversal. Thus, the angle is 70°.

26. In an isosceles triangle, the vertex angle is 50°. What is each base angle?

A) 95°

B) 75°

C) 85°

D) 65°

Answer: D

Explanation: Sum of base angles = 180° – 50° = 130°. Each base angle = 130°/2 = 65°.

27. If the sum of two angles of a triangle is 100°, what is the third angle?

A) 70°

B) 80°

C) 90°

D) 100°

Answer: B

Explanation: Sum of angles = 180°. Third angle = 180° – 100° = 80°.

28. In a parallelogram, one angle is 80°. What is the opposite angle?

A) 80°

B) 100°

C) 110°

D) 120°

Answer: A

Explanation: In a parallelogram, opposite angles are equal. Thus, the opposite angle is 80°.

29. If the angles of a triangle are in the ratio 3:4:5, what is the smallest angle?

A) 45°

B) 60°

C) 75°

D) 90°

Answer: A

Explanation: Let angles be 3x, 4x, 5x. Sum = 12x = 180°, x = 15°. Smallest angle = 3x = 3 × 15° = 45°.

30. In a triangle, one angle is 30° and another is twice that. What is the third angle?

A) 90°

B) 100°

C) 110°

D) 120°

Answer: A

Explanation: Angles: 30°, 2 × 30° = 60°. Third angle = 180° – 30° – 60° = 90°.

31. If two parallel lines are cut by a transversal, what is the corresponding angle to a 110° angle?

A) 70°

B) 110°

C) 90°

D) 180°

Answer: B

Explanation: Corresponding angles are equal when parallel lines are cut by a transversal. Thus, the angle is 110°.

32. In a right-angled triangle, one acute angle is 50°. What is the other acute angle?

A) 30°

B) 40°

C) 50°

D) 60°

Answer: B

Explanation: Sum of acute angles = 90°. Other acute angle = 90° – 50° = 40°.

33. If the exterior angle of a triangle is 130° and one opposite interior angle is 50°, what is the other?

A) 70°

B) 80°

C) 90°

D) 100°

Answer: B

Explanation: Exterior angle = sum of opposite interior angles. Other interior angle = 130° – 50° = 80°.

34. In a quadrilateral, the angles are in the ratio 2:3:4:5. What is the smallest angle?

A) 36°

B) 54°

C) 72°

D) 51.5°

Answer: D

Explanation: Let angles be 2x, 3x, 4x, 5x. Sum = 14x = 360°, x = 25.71°. Smallest angle = 2x ≈ 51.5°.

35. In a triangle ABC, ∠A = 90° and ∠B = 35°. What is ∠C?

A) 45°

B) 55°

C) 65°

D) 75°

Answer: B
Explanation: Sum of angles = 180°. ∠C = 180° – 90° – 35° = 55°.

36. If the angles of a triangle are in the ratio 1:1:2, what is the largest angle?
A) 90°
B) 80°
C) 70°
D) 60°
Answer: A
Explanation: Let angles be x, x, 2x. Sum = 4x = 180°, x = 45°. Largest angle = 2x = 90°.

37. In a parallelogram, one angle is 60°. What is the sum of the other three angles?
A) 300°
B) 270°
C) 240°
D) 210°
Answer: A
Explanation: Sum of angles in a parallelogram = 360°. If one angle is 60°, others sum to 360° – 60° = 300°.

38. If one angle of an isosceles triangle is 80°, what could be one of the equal angles?
A) 50°
B) 60°
C) 70°
D) 80°
Answer: A
Explanation: If 80° is the vertex angle, equal angles sum to 180° – 80° = 100°. Each equal angle = 100°/2 = 50°.

39. If two angles of a triangle are 40° and 60°, what is the exterior angle at the third vertex?

A) 110°
B) 100°
C) 120°
D) 130°
Answer: B
Explanation: Third angle = 180° – 40° – 60° = 80°. Exterior angle = 40° + 60° = 100°.

40. In a triangle, the angles are in the ratio 3:5:7. What is the smallest angle?
A) 36°
B) 48°
C) 60°
D) 72°
Answer: A
Explanation: Let angles be 3x, 5x, 7x. Sum = 15x = 180°, x = 12°. Smallest angle = 3x = 36°.

**High Level Questions (Q41–50, 20% of Section)**

41. In a triangle ABC, ∠A = 2∠B, and ∠C = 3∠B. What is ∠B?
A) 30°
B) 40°
C) 50°
D) 60°
Answer: A
Explanation: Let ∠B = x. Then ∠A = 2x, ∠C = 3x. Sum = x + 2x + 3x = 6x = 180°, x = 30°. Thus, ∠B = 30°.

42. In a triangle, one angle is 20° more than the second, and the third is twice the second. What is the second angle?
A) 40°
B) 50°
C) 60°
D) 70°
Answer: A

Explanation: Let second angle = x. Then first = x + 20°, third = 2x. Sum = x + (x + 20°) + 2x = 4x + 20° = 180°, 4x = 160°, x = 40°.

43. In a quadrilateral, the angles are in the ratio 1:2:3:6. What is the largest angle?

A) 120°
B) 150°
C) 180°
D) 210°
Answer: C
Explanation: Let angles be x, 2x, 3x, 6x. Sum = 12x = 360°, x = 30°. Largest angle = 6x = 180°.

44. In a triangle ABC, ∠A = 3∠B, and the exterior angle at C is 120°. What is ∠B?

A) 20°
B) 30°
C) 40°
D) 50°
Answer: B
Explanation: Exterior ∠C = ∠A + ∠B = 120°. Let ∠B = x, ∠A = 3x. Then 3x + x = 120°, 4x = 120°, x = 30°. Thus, ∠B = 30°.

45. If the vertical angle of an isosceles triangle is 40°, and the exterior angle at a base is 110°, what is one base angle?

A) 70°
B) 80°
C) 90°
D) 100°
Answer: A
Explanation: Exterior angle at base = sum of opposite interior angles (vertex + other base). Base angle = 110° – 40° = 70°.

46. In a triangle, the angles are in the ratio 2:3:5, and the triangle is right-angled. What is the largest angle?

A) 90°
B) 100°
C) 110°
D) 120°
Answer: A
Explanation: Largest angle in a right-angled triangle = 90°. Ratio 2:3:5 implies one angle is 90° (5x), with 10x = 180°, x = 18°.

47. In a parallelogram ABCD, ∠A = 2x and ∠B = 3x. What is ∠A?
A) 72°
B) 108°
C) 90°
D) 120°
Answer: A
Explanation: Adjacent angles are supplementary: 2x + 3x = 180°, 5x = 180°, x = 36°. ∠A = 2x = 72°.

48. In a triangle, one angle is 30° less than twice another, and the third is 50°. What is the smallest angle?
A) 40°
B) 50°
C) 60°
D) 70°
Answer: A
Explanation: Let one angle = x. Other angle = 2x – 30°. Sum = x + (2x – 30°) + 50° = 180°, 3x = 160°, x ≈ 53.33°. Angles: 53.33°, 76.67°, 50°. Smallest ≈ 40°.

49. If the exterior angles at two vertices of a triangle are 100° and 120°, what is the exterior angle at the third vertex?
A) 140°
B) 150°
C) 160°
D) 170°
Answer: A

Explanation: Sum of exterior angles of a triangle = 360°. Third exterior angle = 360° – 100° – 120° = 140°.

50. In a triangle ABC, ∠A = x, ∠B = 2x, and the exterior angle at C is 120°. What is ∠A?

A) 70°
B) 50°
C) 60°
D) 40°
Answer: D
Explanation: Exterior ∠C = ∠A + ∠B = x + 2x = 3x = 120°, x = 40°. Thus, ∠A = 40°.

## Section 2: Mensuration and Coordinate Geometry (Questions 51–100)

### Low Level Questions (Q51–60, 20% of Section)

51. What is the area of a square with side 5 cm?

A) 25 $cm^2$
B) 20 $cm^2$
C) 30 $cm^2$
D) 15 $cm^2$
Answer: A
Explanation: Area of a square = $side^2$. Area = $5^2 = 25$ $cm^2$.

52. What is the perimeter of a rectangle with length 8 cm and breadth 4 cm?

A) 24 cm
B) 20 cm
C) 28 cm
D) 16 cm
Answer: A
Explanation: Perimeter of a rectangle = 2(length + breadth). Perimeter = 2(8 + 4) = 24 cm.

53. What is the area of a triangle with base 6 cm and height 4 cm?

A) 22 cm²
B) 10 cm²
C) 12 cm²
D) 16 cm²
Answer: C
Explanation: Area of a triangle = (1/2) × base × height. Area = (1/2) × 6 × 4 = 12 cm².

54. What is the circumference of a circle with radius 7 cm? (Use π = 22/7)
A) 44 cm
B) 48 cm
C) 50 cm
D) 52 cm
Answer: A
Explanation: Circumference = 2πr. Circumference = 2 × (22/7) × 7 = 44 cm.

55. What is the area of a circle with radius 3 cm? (Use π = 3.14)
A) 28.62 cm²
B) 28.26 cm²
C) 37.68 cm²
D) 9.42 cm²
Answer: B
Explanation: Area = πr². Area = 3.14 × 3² = 28.26 cm².

56. What is the perimeter of a square with side 6 cm?
A) 24 cm
B) 20 cm
C) 28 cm
D) 18 cm
Answer: A
Explanation: Perimeter of a square = 4 × side. Perimeter = 4 × 6 = 24 cm.

57. What is the area of a rectangle with length 10 cm and breadth 5 cm?

A) 50 $cm^2$
B) 40 $cm^2$
C) 60 $cm^2$
D) 30 $cm^2$
Answer: A
Explanation: Area of a rectangle = length × breadth. Area = 10 × 5 = 50 $cm^2$.

58. What is the volume of a cube with edge 4 cm?
A) 64 $cm^3$
B) 48 $cm^3$
C) 32 $cm^3$
D) 16 $cm^3$
Answer: A
Explanation: Volume of a cube = $edge^3$. Volume = $4^3$ = 64 $cm^3$.

59. What is the area of a triangle with base 8 cm and height 3 cm?
A) 12 $cm^2$
B) 14 $cm^2$
C) 16 $cm^2$
D) 18 $cm^2$
Answer: A
Explanation: Area = (1/2) × base × height. Area = (1/2) × 8 × 3 = 12 $cm^2$.

60. What is the circumference of a circle with diameter 14 cm? (Use π = 22/7)
A) 44 cm
B) 48 cm
C) 50 cm
D) 52 cm
Answer: A
Explanation: Circumference = πd. Circumference = (22/7) × 14 = 44 cm.

**Medium Level Questions (Q61–90, 60% of Section)**
61. What is the area of a triangle with sides 3 cm, 4 cm, and 5 cm?

A) 6 $cm^2$
B) 8 $cm^2$
C) 10 $cm^2$
D) 12 $cm^2$
Answer: A
Explanation: This is a right-angled triangle ($3^2 + 4^2 = 5^2$). Area = (1/2) × base × height = (1/2) × 3 × 4 = 6 $cm^2$.

62. What is the perimeter of a rectangle with area 24 $cm^2$ and length 6 cm?
A) 22 cm
B) 20 cm
C) 24 cm
D) 26 cm
Answer: B
Explanation: Area = length × breadth, 24 = 6 × breadth, breadth = 4 cm. Perimeter = 2(6 + 4) = 20 cm.

63. What is the area of a circle with circumference 44 cm? (Use π = 22/7)
A) 154 $cm^2$
B) 144 $cm^2$
C) 164 $cm^2$
D) 174 $cm^2$
Answer: A
Explanation: Circumference = $2\pi r = 44$, $r = 44 \times (7/44) = 7$ cm. Area = $\pi r^2 = (22/7) \times 7^2 = 154$ $cm^2$.

64. What is the volume of a cuboid with length 5 cm, breadth 4 cm, and height 3 cm?
A) 60 $cm^3$
B) 50 $cm^3$
C) 70 $cm^3$
D) 80 $cm^3$
Answer: A
Explanation: Volume = length × breadth × height. Volume = 5 × 4 × 3 = 60 $cm^3$.

65. What is the area of a parallelogram with base 8 cm and height 5 cm?
A) 55 cm²
B) 45 cm²
C) 50 cm²
D) 40 cm²
Answer: D
Explanation: Area = base × height. Area = 8 × 5 = 40 cm².

66. What is the perimeter of a triangle with sides 5 cm, 12 cm, and 13 cm?
A) 34 cm
B) 28 cm
C) 32 cm
D) 30 cm
Answer: D
Explanation: Perimeter = sum of sides = 5 + 12 + 13 = 30 cm.

67. What is the surface area of a cube with edge 6 cm?
A) 216 cm²
B) 180 cm²
C) 144 cm²
D) 108 cm²
Answer: A
Explanation: Surface area = 6 × edge². Surface area = 6 × 6² = 216 cm².

68. What is the area of a trapezium with parallel sides 6 cm and 10 cm, and height 5 cm?
A) 40 cm²
B) 50 cm²
C) 60 cm²
D) 70 cm²
Answer: A
Explanation: Area = (1/2) × (sum of parallel sides) × height. Area = (1/2) × (6 + 10) × 5 = 40 cm².

69. What is the volume of a cylinder with radius 7 cm and height 10 cm? (Use π = 22/7)

A) 1440 $cm^3$

B) 1540 $cm^3$

C) 1640 $cm^3$

D) 1740 $cm^3$

Answer: B

Explanation: Volume = $\pi r^2 h$. Volume = $(22/7) \times 7^2 \times 10 = 1540\ cm^3$.

70. What is the area of a square with diagonal 8 cm?

A) 32 $cm^2$

B) 36 $cm^2$

C) 40 $cm^2$

D) 44 $cm^2$

Answer: A

Explanation: Diagonal = side × √2, side = $8/\sqrt{2} = 4\sqrt{2}$ cm. Area = $side^2 = (4\sqrt{2})^2 = 32\ cm^2$.

71. What is the perimeter of a rectangle with area 30 $cm^2$ and breadth 5 cm?

A) 22 cm

B) 24 cm

C) 26 cm

D) 28 cm

Answer: A

Explanation: Area = length × breadth, 30 = length × 5, length = 6 cm. Perimeter = 2(6 + 5) = 22 cm.

72. What is the area of a circle with diameter 10 cm? (Use π = 3.14)

A) 78.5 $cm^2$

B) 75.5 $cm^2$

C) 80.5 $cm^2$

D) 82.5 $cm^2$

Answer: A

Explanation: Radius = 10/2 = 5 cm. Area = $\pi r^2 = 3.14 \times 5^2 = 78.5\ cm^2$.

73. What is the volume of a cube with surface area 150 $cm^2$?
A) 225 $cm^3$
B) 150 $cm^3$
C) 175 $cm^3$
D) 125 $cm^3$
Answer: D
Explanation: Surface area = 6 × $edge^2$ = 150, $edge^2$ = 25, edge = 5 cm. Volume = $edge^3$ = $5^3$ = 125 $cm^3$.

74. What is the area of a triangle with sides 6 cm, 8 cm, and 10 cm?
A) 30 $cm^2$
B) 28 $cm^2$
C) 32 $cm^2$
D) 24 $cm^2$
Answer: D
Explanation: Right-angled triangle ($6^2 + 8^2 = 10^2$). Area = (1/2) × 6 × 8 = 24 $cm^2$.

75. What is the circumference of a circle with area 154 $cm^2$? (Use π = 22/7)
A) 44 cm
B) 48 cm
C) 50 cm
D) 52 cm
Answer: A
Explanation: Area = $\pi r^2$ = 154, $r^2$ = 154 × (7/22) = 49, r = 7 cm. Circumference = $2\pi r$ = 2 × (22/7) × 7 = 44 cm.

76. What is the volume of a cuboid with length 6 cm, breadth 5 cm, and height 4 cm?
A) 120 $cm^3$
B) 110 $cm^3$
C) 130 $cm^3$
D) 140 $cm^3$
Answer: A

Explanation: Volume = length × breadth × height. Volume = 6 × 5 × 4 = 120 $cm^3$.

77. What is the area of a parallelogram with base 10 cm and height 6 cm?
A) 60 $cm^2$
B) 50 $cm^2$
C) 70 $cm^2$
D) 80 $cm^2$
Answer: A
Explanation: Area = base × height. Area = 10 × 6 = 60 $cm^2$.

78. What is the perimeter of a triangle with sides 7 cm, 24 cm, and 25 cm?
A) 54 cm
B) 56 cm
C) 52 cm
D) 50 cm
Answer: B
Explanation: Perimeter = 7 + 24 + 25 = 56 cm.

79. What is the surface area of a cube with volume 64 $cm^3$?
A) 96 $cm^2$
B) 80 $cm^2$
C) 64 $cm^2$
D) 48 $cm^2$
Answer: A
Explanation: Volume = $edge^3$ = 64, edge = 4 cm. Surface area = 6 × $edge^2$ = 6 × 16 = 96 $cm^2$.

80. What is the area of a trapezium with parallel sides 8 cm and 12 cm, and height 6 cm?
A) 60 $cm^2$
B) 65 $cm^2$
C) 70 $cm^2$
D) 75 $cm^2$
Answer: A

Explanation: Area = (1/2) × (8 + 12) × 6 = 60 cm².

81. What is the volume of a cylinder with radius 4 cm and height 7 cm? (Use π = 22/7)
A) 372 cm³
B) 362 cm³
C) 352 cm³
D) 382 cm³
Answer: C
Explanation: Volume = πr²h = (22/7) × 4² × 7 = 352 cm³.

82. What is the area of a square with perimeter 28 cm?
A) 49 cm²
B) 56 cm²
C) 64 cm²
D) 72 cm²
Answer: A
Explanation: Perimeter = 4 × side = 28, side = 7 cm. Area = side² = 7² = 49 cm².

83. What is the distance between points (2, 3) and (5, 7) in the coordinate plane?
A) 5 units
B) 6 units
C) 7 units
D) 8 units
Answer: A
Explanation: Distance = √[(5 – 2)² + (7 – 3)²] = √(9 + 16) = √25 = 5 units.

84. What is the area of a circle with circumference 22 cm? (Use π = 22/7)
A) 38.5 cm²
B) 44 cm²
C) 49 cm²
D) 54 cm²
Answer: A

Explanation: Circumference = $2\pi r = 22$, $r = 22 \times (7/44) = 3.5$ cm. Area = $\pi r^2 = (22/7) \times (3.5)^2 = 38.5$ cm².

85. What is the volume of a cube with surface area 96 cm²?

A) 64 cm³

B) 72 cm³

C) 80 cm³

D) 88 cm³

Answer: A

Explanation: Surface area = $6 \times \text{edge}^2 = 96$, $\text{edge}^2 = 16$, edge = 4 cm. Volume = $\text{edge}^3 = 64$ cm³.

86. What is the perimeter of a rectangle with area 48 cm² and length 8 cm?

A) 28 cm

B) 30 cm

C) 32 cm

D) 34 cm

Answer: A

Explanation: Area = length × breadth, $48 = 8 \times$ breadth, breadth = 6 cm. Perimeter = $2(8 + 6) = 28$ cm.

87. What is the area of a triangle with sides 5 cm, 12 cm, and 13 cm?

A) 30 cm²

B) 28 cm²

C) 26 cm²

D) 24 cm²

Answer: A

Explanation: Right-angled triangle ($5^2 + 12^2 = 13^2$). Area = $(1/2) \times 5 \times 12 = 30$ cm².

88. What is the volume of a cylinder with diameter 10 cm and height 14 cm? (Use $\pi = 22/7$)

A) 1200 cm³

B) 1100 cm³

C) 1300 cm³

D) 1400 $cm^3$

Answer: B

Explanation: Radius = 10/2 = 5 cm. Volume = $\pi r^2 h$ = (22/7) × $5^2$ × 14 = 1100 $cm^3$.

89. What is the area of a parallelogram with base 12 cm and height 8 cm?

A) 96 $cm^2$

B) 90 $cm^2$

C) 84 $cm^2$

D) 80 $cm^2$

Answer: A

Explanation: Area = base × height = 12 × 8 = 96 $cm^2$.

90. What is the distance between points (1, 1) and (4, 5) in the coordinate plane?

A) 5 units

B) 6 units

C) 7 units

D) 8 units

Answer: A

Explanation: Distance = $\sqrt{[(4 - 1)^2 + (5 - 1)^2]} = \sqrt{(9 + 16)} = \sqrt{25}$ = 5 units.

High Level Questions (Q91–100, 20% of Section)

91. What is the area of an equilateral triangle with side 6 cm?

A) $9\sqrt{3}$ $cm^2$

B) $12\sqrt{3}$ $cm^2$

C) $15\sqrt{3}$ $cm^2$

D) $18\sqrt{3}$ $cm^2$

Answer: A

Explanation: Area = ($\sqrt{3}/4$) × $side^2$. Area = ($\sqrt{3}/4$) × $6^2$ = $9\sqrt{3}$ $cm^2$.

92. A rectangle has a perimeter of 40 cm and an area of 96 $cm^2$. What is its length?

A) 12 cm

B) 14 cm

C) 16 cm
D) 18 cm
Answer: A
Explanation: Let length = l, breadth = b. Perimeter: $2(l + b) = 40$, $l + b = 20$. Area: $lb = 96$. Solve: $l(20 – l) = 96$, $l^2 – 20l + 96 = 0$, $l = 12, 8$. Length = 12 cm.

93. What is the area of a sector of a circle with radius 7 cm and sector angle 60°? (Use $\pi = 22/7$)
A) 25.67 $cm^2$
B) 28.67 $cm^2$
C) 30.67 $cm^2$
D) 33.67 $cm^2$
Answer: A
Explanation: Area = $(\theta/360°) \times \pi r^2 = (60/360) \times (22/7) \times 7^2 = (1/6) \times 154 = 25.67$ $cm^2$.

94. A cuboid has a volume of 120 $cm^3$ and surface area of 148 $cm^2$. If length = 6 cm, what is its breadth?
A) 4 cm
B) 5 cm
C) 6 cm
D) 7 cm
Answer: A
Explanation: Volume = $l \times b \times h = 120$, $6 \times b \times h = 120$, $b \times h = 20$. Surface area = $2(lb + bh + lh) = 148$. Solve: $bh = 20$, breadth = 4 cm.

95. What is the area of an isosceles triangle with equal sides 10 cm and base 12 cm?
A) 48 $cm^2$
B) 50 $cm^2$
C) 52 $cm^2$
D) 54 $cm^2$
Answer: A

Explanation: Height = $\sqrt{(10^2 – (12/2)^2)} = \sqrt{(100 – 36)} = 8$ cm. Area = (1/2) × 12 × 8 = 48 cm².

96. A circle is inscribed in a square with side 10 cm. What is the area of the circle? (Use π = 3.14)

A) 78.5 cm²
B) 80.5 cm²
C) 82.5 cm²
D) 84.5 cm²
Answer: A
Explanation: Diameter = side = 10 cm, radius = 5 cm. Area = $\pi r^2$ = 3.14 × $5^2$ = 78.5 cm².

97. What is the volume of a cone with radius 6 cm and height 8 cm? (Use π = 22/7)

A) 288 cm³
B) 298 cm³
C) 308 cm³
D) 318 cm³
Answer: A
Explanation: Volume = (1/3) × $\pi r^2 h$ = (1/3) × (22/7) × $6^2$ × 8 = 288 cm³.

98. The coordinates of the vertices of a triangle are (0, 0), (3, 0), and (0, 4). What is its area?

A) 6 units²
B) 8 units²
C) 10 units²
D) 12 units²
Answer: A
Explanation: Base = 3, height = 4. Area = (1/2) × base × height = (1/2) × 3 × 4 = 6 units².

99. A rectangle has a perimeter of 34 cm and a diagonal of 13 cm. What is its area?

A) 60 cm²

B) 70 cm²
C) 80 cm²
D) 90 cm²
Answer: A
Explanation: Let length = l, breadth = b. Perimeter: $2(l + b) = 34$, $l + b = 17$. Diagonal: $\sqrt{(l^2 + b^2)} = 13$, $l^2 + b^2 = 169$. Solve: $lb = 60$ cm².

100. What is the area of a sector of a circle with radius 14 cm and sector angle 90°? (Use $\pi = 22/7$)
A) 184 cm²
B) 164 cm²
C) 174 cm²
D) 154 cm²
Answer: D
Explanation: Area = $(90/360) \times \pi r^2 = (1/4) \times (22/7) \times 14^2 = 154$ cm².

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