MATHS

Area and Perimeter Worksheet for MAH MCA CET 2025

For students preparing for MCA Entrance Exam

1. What is the area of an equilateral triangle of side 16 cm?
   A. $48\sqrt{3}\ cm^2$
   B. $128\sqrt{3}\ cm^2$
   C. $9.6\sqrt{3}\ cm^2$
   D. $64\sqrt{3}\ cm^2$

2. What is the area of triangle ABC, where AB = 10cm, BC = 10 cm and CA= 16 cm?
   A. 48 cm²
   B. $8\sqrt{65}\ cm^2$
   C. 36 cm²
   D. $4\sqrt{61}\ cm^2$

3. What is the area of triangle ABC, where AB = 12 cm, BC= 14 cm, and CA= 18 cm?
   A. $4\sqrt{110}\ cm^2$
   B. $6\sqrt{110}\ cm^2$
   C. $8\sqrt{110}\ cm^2$
   D. $10\sqrt{110}\ cm^2$

4. If the sides of a triangle are 26 cm, 24 cm and 10 cm, what is its area?
   A. 120 cm²
   B. 130 cm²
   C. 312 cm²
   D. 315 cm²

5. What is the area of triangle ABC, where AB= 8 cm, BC= 7 cm, and ABC= 60°
   A. $12\sqrt{3}\ cm^2$
   B. $14\sqrt{3}\ cm^2$
   C. $16\sqrt{3}\ cm^2$
   D. $18\sqrt{3}\ cm^2$

6. Find the area of a square, whose diagonal is 10 cm.
   A. 100 cm²
   B. 40 cm²
   C. 20 cm²
   D. 50 cm²

7. Find the area of a rectangle whose one diagonal is 20 cm and the length of the longer side is 16 cm.
   A. 168 cm²
   B. 180 cm²
   C. 172 cm²
   D. 192 cm²

8. Find the area of a parallelogram with base 24 cm and height 16 cm.
   A. 262 cm²
   B. 384 cm²
   C. 192 cm²
   D. 131 cm²

9. Find the area of a rhombus whose perimeter is 120 cm and the sum of the diagonals is 84 cm.
   A. 864 cm²
   B. 1364 cm²
   C. 1728 cm²
   D. 968 cm²

10. Find the area of a trapezium whose parallel sides are 20 cm and 18 cm long, and the distance between them is 15 cm.
   A. 225 cm²
   B. 275 cm²
   C. 285 cm²
   D. 315 cm²

11. One of the equal sides of an isosceles triangle is 15 cm and the third side is 14 am in length. A square has its perimeter equal to the

perimeter of this triangle. What is the area of the square?

A. $\frac{961}{16}$ sq.cm
B. 121 sq.cm
C. 11 sq.cm
D. 98 sq.cm

12. A wire in the form of a circle of radius 3.5 m is bent in the form of a rectangle, whose length and breadth are in the ratio 6: 5. What is the area of the rectangle?

A. 60 cm²
B. 30 cm²
C. 45 cm²
D. 15 cm²

13. Which triad does NOT belong to the group?

A. 600 cm
B. 800 cm
C. 400 cm
D. 1000 cm

14. The ratio of the areas of a square and an equilateral triangle is $3\sqrt{3}:4$. If s and t are the perimeters of the square and the triangle respectively, then which of the following relationships between s and t is/are true?

A. S > t
B. S = t
C. S < t
D. Either (1) or (2)

15. The length and breadth of a rectangular cardboard are 40 cm and 35 cm respectively. If the largest possible square is cut out from this, what is the ratio of areas of the rectangle unused and the square thus formed?

A. 5:8
B. 6:11
C. 1:7
D. 4:9

16. An equilateral triangle is inscribed in a circle of radius 12 cm. What is the area of the triangle?

A. $48\sqrt{3}$ cm²
B. $72\sqrt{3}$ cm²
C. $98\sqrt{3}$ cm²
D. $108\sqrt{3}$ cm²

17. In the figure given below, ABCD is a square of side 28cm. O is the centre of the circle.
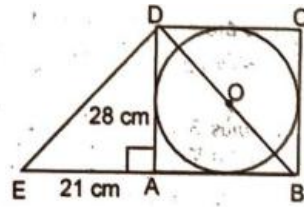
What is the difference between the area of the triangle BDE and the area of the circle?

A. 108 sq.cm
B. 32 sq.cm
C. 70 sq.cm
D. 56 sq.cm

18. What is the total surface area of a cuboidal box of dimensions 20 cm x 18 cm x 15 cm?

A. 1380 cm²
B. 1440 cm²
C. 1600 cm²
D. 1860 cm²

19. The diameter of the base of a cylinder is 20 cm and its height is 12 cm. What is the volume of the largest cuboid that can be cut off from it?

A. 600 cm³
B. 1200 cm³
C. 1800 cm³
D. 2400 cm³

20. The side of a cubical box is 24 cm. A total of 2100 lead shots each of radius 6 mm are dropped in the cubical box which already has some water in it. What is the rise in the level of the water column after dropping the shots?

A. 38 mm
B. 42 mm
C. 22 mm
D. 33 mm

21. It costs ₹ 8960 to paint the outer portion of the four walls of a rectangular hall. The cost of painting is ₹ 8 per square foot. If the length and breadth of the hall are 20 feet and 12 feet respectively, then what is the height of the rectangular hall?

A. 10 feet
B. 12.5 feet
C. 17.5 feet
D. 15 feet

22. A road roller is in the shape of a cylinder. The radius of the cross section is 42 cm and the

length is 2 meters. What is the area covered by the roller in making 200 revolutions?

A. 1056 m²
B. 2112 m²
C. 1584 m²
D. 1728 m²

23. The dimensions of a room are 25 feet x 15 feet x 12 feet. What is the cost of white washing the four walls of the room at ₹5 per square feet which has one door of dimensions 6 feet x 3 feet and three windows of dimensions 4 feet x 3 feet each?

A. ₹4800
B. ₹3600
C. ₹3560
D. ₹4530

24. A metallic sphere of radius 12 cm is melted and drawn into a wire, whose radius of cross section is 16 cm. What is the length of the wire?

A. 45 cm
B. 18 cm
C. 90 cm
D. 9 cm

25. Six spherical cannon balls are tightly packed into a rectangular box in one layer. Each row has two cannon balls and each column has three balls. What part of the box is empty?

A. 11/56
B. 10/21
C. 11/27
D. 5/21

26. A sector of a circle of radius 15 cm and central angle 288° is folded to form a cone, by joining its edges. What is the volume of the cone thus formed?

A. 135π cm³
B. 270π cm³
C. 432π cm³
D. 512π cm³

27. The length of a rectangle is increased by 15% and the breadth is increased by 22% resulting in an increase of 806 square feet in the area of the rectangle. What is the length of the rectangle after the increase?

A. 36 feet
B. 42 feet
C. 47 feet

D. Can not determinted

28. A field in the shape of a triangle has a base of 25 meters and altitude of 20 meters. If the cost of tilling the field is ₹15 per square meter, what is the total cost incurred?

A. ₹2250
B. ₹2750
C. ₹3250
D. ₹3750

29. A wire is bent into a rectangle of length 16 cm and breadth 6 cm. If it is bent in the form of a circle, what will be its area?

A. 150 cm²
B. 231 cm²
C. 168 cm²
D. 154 cm²

30. A circle is inscribed in an equilateral triangle of side 18 cm. What is the area of the incircle?

A. 9π cm²
B. 18π cm²
C. 28π cm²
D. 27π cm²

31. A square is inscribed in a circle of radius 20 cm. What is the area of the square?

A. 400 cm²
B. 800 cm²
C. 1200 cm²
D. 1600 cm²

32. Inside a rectangular plot, a circular garden developed which exactly fits in the rectangular plot and the breadth of the rectangle is 10 m. If the length of the rectangle is 16 m, then find the area of the space left out in the rectangular plot after developing the garden.

A. $49\frac{1}{7}\ m^2$
B. $81\frac{1}{7}\ m^2$
C. $49\frac{3}{7}\ m^2$
D. $81\frac{3}{7}\ m^2$

33. The ratio of the length and breadth of a rectangle is 3:2. If the perimeter of the rectangle is equal to the perimeter of a square, what is the ratio of their respective areas?

A. 9:4
B. 24:25

C. 25:24
D. 27:8

34. The side of the square PQRS is greater than the side of square ABCD by 15%. By what percentage is the area of the square PQRS more than that of the square ABCD?
   A. 32.25%
   B. 26.75 %
   C. 24%
   D. 20%

35. A picture measures 80cm x 50cm. It has a frame of uniform width of 10cm all around and outside it. What is the area of the frame?
   A. 3000 cm²
   B. 2200 cm²
   C. 1600 cm²
   D. 3800 cm²

36. A cylindrical container has rasagullas, which are spherical in shape and are in sugar water, upto a height of 40 cm. If the base area of the cylindrical container is 47 sq cm and there are 210 rasagullas. The volume of the sugar water in the container is 1000 cm3, then find the radius of each rasagulla.
   A. 1.4 cm
   B. 2.6 cm
   C. 0.5 cm
   D. 1 cm

37. A sphere of the maximum possible volume is carved out of a cubical wooden block of edge 42 cm. What is the volume of the sphere carved (in cm3)?
   A. 38808
   B. 26605
   C. 24121
   D. 51744

38. A sector of a circle of radius 9 cm is folded such that it forms into a cone. If the central angle of the sector is 120°, then what is the volume of the cone formed? (in cm3)
   A. $54\sqrt{2}$
   B. $\frac{396}{7}\sqrt{2}$
   C. $\frac{214}{7}\sqrt{2}$
   D. $\frac{594}{7}\sqrt{2}$

39. The total surface area of a pyramid whose base is a regular polygon is 500 cm² and the area of its base is 140 cm². If the area of each lateral surface is 20 cm², then find the total number of lateral faces of the pyramid.
   A. 15
   B. 16
   C. 18
   D. 20

40. 30. A cube of edge one meter is cut into small cubes of edge10 cm each. How many such small cubes can be obtained?
   A. 1000
   B. 1296
   C. 512
   D. 2196

Answer Key

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