

MATHS

Volume & Surface Area Worksheet for MAH MCA CET 2025

For students preparing for MCA Entrance Exam.

- A solid cube of volume 13824 is cut into 8 cubes of cm^3 equal volumes. The ratio of the surface area of the original cube to the sum of the surface areas of three of the smaller cubes is:
 - 2 : 3
 - 4 : 3
 - 8 : 3
 - 2 : 1
- How much iron sheet (in) m^2 will be needed to construct a rectangular tank measuring $10\text{m} \times 8\text{m} \times 6\text{m}$, if a circular opening of radius one metre is to be left at the top of the tank? (correct to one decimal place)
 - 371.6
 - 370.4
 - 372.9
 - 370.8
- The areas of the three adjacent faces of a cuboid are 32 cm^2 , 24 cm^2 and 48 cm^2 . What is the volume of the cuboid?
 - 192 cm^3
 - 256 cm^3
 - 288 cm^3
 - 128 cm^3
- The area of a triangle is 15 sq cm and the radius of its incircle is 3 cm . Its perimeter is equal to:
 - 12 cm
 - 20 cm
 - 5 cm
 - 10 cm
- The volume of a metallic cylindrical pipe is 7480 cm^3 . If its length is 1.4 m and its external radius is 9 cm , then its thickness (given $\pi = 22/7$) is:
 - 1 cm
 - 0.8 cm
 - 0.9 cm
 - 1.2 cm
- The length of the metallic pipe is 7.56 m . Its external and internal radii are 2.5 cm and 1.5 cm respectively. If 1 cubic cm of the metal weight 7.5 g , then the weight of the pipe is: (Take $\pi = 22/7$)
 - 72.82 kg
 - 70.14 kg
 - 71.28 kg
 - 69.68 kg
- A sector is cut out from a circle of diameter 42 cm . If the angle of the sector is 150° , then its area (in square cm) is: (Take $\pi = 22/7$)
 - 564
 - 574
 - 580.6
 - 577.5
- The area of a field in the shape of a triangle with each side x metre is equal to the area of another triangular field having sides 50m , 70m and 80m . The value of x is closest to:
 - 65.5
 - 63.2
 - 62.4
 - 61.8
- The curved surface area and volume of a cylinder are 264 square cm and 924 cubic cm , respectively. What is the ratio of its radius to height? (Take $\pi = 22/7$)
 - 4 : 3

- B. 5:4
- C. 7:6
- D. 3:2

10. The radius of a sphere is reduced by 40%. By what percent, will its volume decrease?

- A. 60%
- B. 64%
- C. 72.5%
- D. 78.4%

11. The radii of two circular faces of the frustum of a cone of height 21 cm are 3 cm and 2 cm respectively. What is the volume of the frustum of the cone in cubic cm? (Take $\pi = 22/7$)

- A. 154
- B. 286
- C. 345
- D. 418

12. A sphere of radius 4 cm is melted and recast into smaller spheres of radii 2 cm each. How many such spheres can be made?

- A. 4
- B. 8
- C. 32
- D. 16

13. Six cubes, each of edge 2 cm, are joined end to end. What is the total surface area of the resulting cuboid in cm^2 ?

- A. 96
- B. 144
- C. 104
- D. 128

14. The area of a field in the shape of a hexagon is $2400\sqrt{3}$ square metre. What will be the cost of fencing it at Rs. 18.50 per metre?

- A. Rs. 4440
- B. Rs. 5920
- C. Rs. 5550
- D. Rs. 5180

15. The volume of a right circular cone is 924 cubic cm. If its height is 18 cm, then the area of its base (In square cm) is:

- A. 154
- B. 132
- C. 176
- D. 198

16. The curved surface area and volume of a cylindrical pole are 132 square metres and 528 cubic metres, respectively. What is the height (In m) of the pole? (Take $\pi = 22/7$)

- A. $2\frac{1}{2}$
- B. $3\frac{5}{8}$
- C. $3\frac{1}{2}$
- D. $2\frac{5}{8}$

17. The radius of the base of a cylinder is 7 cm and its curved surface area is 440 square cm. Its volume (In cubic cm) will be: (Take $\pi = 22/7$)

- A. 1760
- B. 1430
- C. 1540
- D. 1650

18. A circle circumscribes a rectangle whose sides are in the ratio 4 : 3. If the perimeter of the rectangle is 56 cm, then what is the area (In square cm) of the circle?

- A. 70π
- B. 96π
- C. 90π
- D. 100π

19. A wire is in the shape of a rectangle whose sides are in the ratio 7 : 4. It was initially in the shape of a circle of radius, very nearly equal to 31.5 cm. The length of smaller side of the rectangle is : (Take $\pi = 22/7$)

- A. 44 cm
- B. 36 cm
- C. 40 cm
- D. 32 cm

20. The length of a rectangular park is 20m more than its breadth. If the cost of fencing the park at Rs. 53 per metre is Rs. 21,200, then what is the area (In square metres) of the park?

- A. 9504
- B. 8925
- C. 9240
- D. 9900

21. The radii of three concentric circles are in the ratio of 4:5:7. What is the ratio of the area between the two inner circles to that between the two outer circles?

- A. 4:7

- B. 5:9
- C. 4:5
- D. 3:8

22. The parallel sides of a trapezium are 20 cm and 10 cm and its non-parallel sides are equal to each other. If its area is 180 cm^2 , then what is the length (in cm) of each non parallel side?

- A. 11
- B. 13
- C. 12
- D. 15

23. Diagonals of a rhombus are respectively 4 cm and 12 cm. Its area (in cm^2) is equal to:

- A. 12
- B. 24
- C. 36
- D. 8

24. In triangle ABC, the length of BC is less than twice the length of AB by 2 cm. The length of AC exceeds the length of AB by 10 cm. The perimeter is 32cm. The length (in cm) of the smallest side of the triangle is:

- A. 4
- B. 10
- C. 8
- D. 6

25. If each side of a rectangle is increased by 22%, then its area will increase by:

- A. 44%
- B. 50%
- C. 46.65%
- D. 48.84%

26. If each side of a rectangle is decreased by 11%, then its area will decrease by:

- A. 21.69%
- B. 20.79%
- C. 13.13%
- D. 26.78%

Q27. If the length of a rectangle is decreased by 11% and the breadth is increased by 11%, its area will undergo:

- A. 13.13% increase
- B. 1.21% increase
- C. 1.21% decrease
- D. 13.13% decrease

Q28. What is the area of a rhombus (in cm^2) whose side is 10 cm and the smallest diagonal is 12 cm?

- A. 120
- B. 192
- C. 96
- D. 50

Q29. Twelve sticks, each of length one unit, are used to form an equilateral triangle. The area of the triangle is:

- A. $3\sqrt{3}$ sq units
- B. $2\sqrt{3}$ sq units
- C. $4\sqrt{3}$ sq units
- D. $8\sqrt{3}$ sq units

30. Equilateral triangles are drawn on the hypotenuse and one of the perpendicular sides of a right-angled isosceles triangle. Their areas are H and A respectively. $\frac{A}{H}$ is equal to:

- A. $\frac{1}{4}$
- B. $\frac{1}{2}$
- C. $\frac{1}{\sqrt{2}}$
- D. $\frac{1}{2\sqrt{2}}$

Answer Key

1. B	2. C	3. A	4. D	5. A	6. C	7. D	8. B	9. C	10. D
11. D	12. B	13. C	14. A	15. A	16. D	17. C	18. D	19. B	20. D
21. D	22. B	23. B	24. D	25. D	26. B	27. C	28. C	29. C	30. B

