

Maharashtra Board Solutions Class 8-Maths (Practice Set 16.3): Chapter 16- Surface Area and Volume



For any clarifications or questions you can write to info@indcareer.com

Postal Address

IndCareer.com, 52, Shilpa Nagar, Somalwada Nagpur - 440015
Maharashtra, India

WhatsApp: +91 9561 204 888, **Website:** <https://www.indcareer.com>

<https://www.indcareer.com/schools/maharashtra-board-solutions-class-8-maths-practice-set-16-3-chapter-16-surface-area-and-volume/>



Maharashtra Board Solutions Class 8-Maths (Practice Set 16.3): Chapter 16- Surface Area and Volume

Class 8: Maths Chapter 16 solutions. Complete Class 8 Maths Chapter 16 Notes.

Maharashtra Board Solutions Class 8-Maths (Practice Set 16.3): Chapter 16- Surface Area and Volume

Maharashtra Board 8th Maths Chapter 16, Class 8 Maths Chapter 16 solutions

Question 1.

Find the volume of the cylinder if height (h) and radius of the base (r) are as given below.

i. $r = 10.5 \text{ cm}$, $h = 8 \text{ cm}$

ii. $r = 2.5 \text{ m}$, $h = 7 \text{ m}$

iii. $r = 4.2 \text{ cm}$, $h = 5 \text{ cm}$

iv. $r = 5.6 \text{ cm}$, $h = 5 \text{ cm}$

Solution:

i. Given: $r = 10.5 \text{ cm}$ and $h = 8 \text{ cm}$

To find: Volume of the cylinder

$$\text{Volume of the cylinder} = \pi r^2 h$$

$$= \frac{22}{7} \times 10.5 \times 10.5 \times 8$$

$$= 22 \times 1.5 \times 10.5 \times 8$$

<https://www.indcareer.com/schools/maharashtra-board-solutions-class-8-maths-practice-set-16-3-chapter-16-surface-area-and-volume/>

$$= 2772 \text{ cc}$$

∴ The volume of the cylinder is 2772 cc.

ii. Given: $r = 2.5 \text{ m}$ and $h = 7 \text{ m}$

To find: Volume of the cylinder

$$\text{Volume of the cylinder} = \pi r^2 h$$

$$= \frac{22}{7} \times 2.5 \times 2.5 \times 7$$

$$= 22 \times 2.5 \times 2.5$$

$$= 137.5 \text{ cu.m}$$

∴ The volume of the cylinder is 137.5 cu.m.

iii. Given: $r = 4.2 \text{ cm}$ and $h = 5 \text{ cm}$

To find: Volume of the cylinder

$$\text{Volume of the cylinder} = \pi r^2 h$$

$$= \frac{22}{7} \times 4.2 \times 4.2 \times 5$$

$$= 22 \times 0.6 \times 4.2 \times 5$$

$$= 277.2 \text{ cc}$$

∴ The volume of the cylinder is 277.2 cc.

iv. Given: $r = 5.6 \text{ cm}$ and $h = 5 \text{ cm}$

To find: Volume of the cylinder

$$\text{Volume of the cylinder} = \pi r^2 h$$

$$= \frac{22}{7} \times 5.6 \times 5.6 \times 5$$

$$= 22 \times 0.8 \times 5.6 \times 5$$

$$= 492.8 \text{ cc}$$

<https://www.indcareer.com/schools/maharashtra-board-solutions-class-8-maths-practice-set-16-3-chapter-16-surface-area-and-volume/>

∴ The volume of the cylinder is 492.8 cc.

Question 2.

How much iron is needed to make a rod of length 90 cm and diameter 1.4 cm?

Solution:

Given: For cylindrical rod: length of rod (h) = 90 cm, and

diameter (d) = 1.4 cm

To find: Iron required to make a rod

diameter (d) = 1.4 cm

∴ radius (r) = $\frac{\text{diameter}}{2} = \frac{1.4}{2} = 0.7$ cm

Volume of rod = $\pi r^2 h$

$$= \frac{22}{7} \times 0.7 \times 0.7 \times 90$$

$$= 22 \times 0.1 \times 0.7 \times 90$$

$$= 138.60 \text{ cc}$$

∴ 138.60 cc of iron is required to make the rod.

Question 3.

How much water will a tank hold if the interior diameter of the tank is 1.6 m and its depth is 0.7 m?

Solution:

Given: interior diameter of the tank (d) = 1.6 m

and depth (h) = 0.7 m

To find: Capacity of the tank

interior diameter of the tank (d) = 1.6 m

∴ Interior radius (r) = $\frac{\text{diameter}}{2} = \frac{1.6}{2} = 0.8$ m

<https://www.indcareer.com/schools/maharashtra-board-solutions-class-8-maths-practice-set-16-3-chapter-16-surface-area-and-volume/>

$$= 0.8 \text{ m}$$

$$= 0.8 \times 100$$

$$\dots[\because 1\text{m} = 100\text{cm}]$$

$$= 80\text{cm}$$

$$h = 0.7 \text{ m} = 0.7 \times 100 = 70 \text{ cm}$$

$$\text{Capacity of the tank} = \text{Volume of the tank} = \pi r^2 h$$

$$= \frac{22}{7} \times 80 \times 80 \times 70$$

$$= 22 \times 80 \times 80 \times 10$$

$$= 1408000 \text{ cc}$$

$$= \frac{1408000}{1000} = 1408$$

$$\dots[\because 1 \text{ litre} = 1000 \text{ cc}]$$

$$= 1408 \text{ litre}$$

$\therefore$ The tank can hold 1408 litre of water.

Question 4.

Find the volume of the cylinder if the circumference of the base of cylinder is 132 cm and height is 25 cm.

Solution:

Given: Circumference of the base of cylinder = 132 cm and height (h) = 25 cm

To find: Volume of the cylinder

$$\text{i. Circumference of base of cylinder} = 2\pi r$$

$$\therefore 132 = 2 \times \frac{22}{7} \times r$$

$$\therefore \frac{132 \times 7}{2 \times 22} = r \quad 132 \times 7 \div 22 = r$$

$$\therefore \frac{6 \times 7}{2} = r \quad 6 \times 7 \div 2 = r$$

<https://www.indcareer.com/schools/maharashtra-board-solutions-class-8-maths-practice-set-16-3-chapter-16-surface-area-and-volume/>

$$\therefore 3 \times 7 = r$$

$$\therefore r = 21 \text{ cm}$$

ii. Volume of the cylinder = $\pi r^2 h$

$$= \frac{22}{7} \times 21 \times 21 \times 25$$

$$= 22 \times 3 \times 21 \times 25$$

$$= 34650 \text{ cc}$$

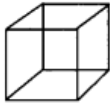
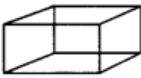
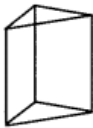
$\therefore$ The volume of the cylinder is 34650 cc.

Intext Questions and Activities

Question 1.

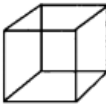
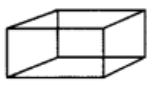
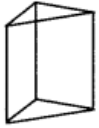
Leonard Euler, discovered an interesting formula regarding the faces, vertices and edges of solid figures.

Count and write the faces, vertices and edges of the following figures and complete the table. From the table verify Euler's formula, $F + V = E + 2$. (Textbook pg. No. 113)

Name	Cube	Cuboid	Triangular Prism	Triangular pyramid	Pentagonal pyramid	Hexagonal prism
Shapes						
Faces (F)	6					8
Vertices (V)	8					12
Edges (E)		12			10	

Solution:

<https://www.indcareer.com/schools/maharashtra-board-solutions-class-8-maths-practice-set-16-3-chapter-16-surface-area-and-volume/>

Name	Cube	Cuboid	Triangular Prism	Triangular pyramid	Pentagonal pyramid	Hexagonal prism
Shapes						
Faces (F)	6	6	5	4	6	8
Vertices (V)	8	8	6	4	6	12
Edges (E)	12	12	9	6	10	18

From the above table, $F + V = E + 2$ i.e. Euler's formula is verified.



Maharashtra Board Solutions

Class 8 Maths

- Chapter 1- Rational and Irrational Numbers (Practice Set 1.1)
- Chapter 1- Rational and Irrational Numbers (Practice Set 1.2)
- Chapter 1- Rational and Irrational Numbers (Practice Set 1.3)
- Chapter 1- Rational and Irrational Numbers (Practice Set 1.4)
- Chapter 2- Parallel Lines and Transversals (Practice Set 2.1)
- Chapter 2- Parallel Lines and Transversals (Practice Set 2.2)
- Chapter 2- Parallel Lines and Transversals (Practice Set 2.3)
- Chapter 3- Indices and Cube Root (Practice Set 3.1)
- Chapter 3- Indices and Cube Root (Practice Set 3.2)
- Chapter 3- Indices and Cube Root (Practice Set 3.3)
- Chapter 4- Altitudes and Medians of a Triangle (Practice Set 4.1)
- Chapter 5- Expansion Formulae (Practice Set 5.1)
- Chapter 5- Expansion Formulae (Practice Set 5.2)
- Chapter 5- Expansion Formulae (Practice Set 5.3)
- Chapter 5- Expansion Formulae (Practice Set 5.4)
- Chapter 6- Factorisation of Algebraic Expressions (Practice Set 6.1)
- Chapter 6- Factorisation of Algebraic Expressions (Practice Set 6.2)
- Chapter 6- Factorisation of Algebraic Expressions (Practice Set 6.3)
- Chapter 6- Factorisation of Algebraic Expressions (Practice Set 6.4)
- Chapter 7- Variation (Practice Set 7.1)

<https://www.indcareer.com/schools/maharashtra-board-solutions-class-8-maths-practice-set-16-3-chapter-16-surface-area-and-volume/>

- Chapter 7- Variation (Practice Set 7.2)
- Chapter 7- Variation (Practice Set 7.3)
- Chapter 8- Quadrilateral: Constructions and Types (Practice Set 8.1)
- Chapter 8- Quadrilateral: Constructions and Types (Practice Set 8.2)
- Chapter 8- Quadrilateral: Constructions and Types (Practice Set 8.3)
- Chapter 9- Discount and Commission (Practice Set 9.1)
- Chapter 9- Discount and Commission (Practice Set 9.2)
- Chapter 10- Division of Polynomials (Practice Set 10.1)
- Chapter 10- Discount and Commission (Practice Set 10.2)
- Chapter 11- Statistics (Practice Set 11.1)
- Chapter 11- Statistics (Practice Set 11.2)
- Chapter 11- Statistics (Practice Set 11.3)
- Chapter 12- Equations in One Variable (Practice Set 12.1)
- Chapter 12- Equations in One Variable (Practice Set 12.2)
- Chapter 13- Congruence of Triangles (Practice Set 13.1)
- Chapter 13- Congruence of Triangles (Practice Set 13.2)
- Chapter 14- Compound Interest (Practice Set 14.1)
- Chapter 14- Compound Interest (Practice Set 14.2)
- Chapter 15- Area (Practice Set 15.1)
- Chapter 15- Area (Practice Set 15.2)
- Chapter 15- Area (Practice Set 15.3)
- Chapter 15- Area (Practice Set 15.4)
- Chapter 15- Area (Practice Set 15.5)
- Chapter 15- Area (Practice Set 15.6)
- Chapter 16- Surface Area and Volume (Practice Set 16.1)

<https://www.indcareer.com/schools/maharashtra-board-solutions-class-8-maths-practice-set-16-3-chapter-16-surface-area-and-volume/>

- Chapter 16- Surface Area and Volume (Practice Set 16.2)
- Chapter 16- Surface Area and Volume (Practice Set 16.3)
- Chapter 17- Factorisation of Algebraic Expressions (Practice Set 17.1)
- Chapter 17- Factorisation of Algebraic Expressions (Practice Set 17.2)

<https://www.indcareer.com/schools/maharashtra-board-solutions-class-8-maths-practice-set-16-3-chapter-16-surface-area-and-volume/>

About About Maharashtra State Board (MSBSHSE)

The Maharashtra State Board of Secondary and Higher Secondary Education or MSBSHSE (Marathi: महाराष्ट्र राज्य माध्यमिक आणि उच्च माध्यमिक शिक्षण मंडळ), is an **autonomous and statutory body established in 1965**. The board was amended in the year 1977 under the provisions of the Maharashtra Act No. 41 of 1965.

The Maharashtra State Board of Secondary & Higher Secondary Education (MSBSHSE), Pune is an independent body of the Maharashtra Government. There are more than 1.4 million students that appear in the examination every year. The Maha State Board conducts the board examination twice a year. This board conducts the examination for SSC and HSC.

The Maharashtra government established the Maharashtra State Bureau of Textbook Production and Curriculum Research, also commonly referred to as Ebalbharati, in 1967 to take up the responsibility of providing quality textbooks to students from all classes studying under the Maharashtra State Board. MSBHSE prepares and updates the curriculum to provide holistic development for students. It is designed to tackle the difficulty in understanding the concepts with simple language with simple illustrations. Every year around 10 lakh students are enrolled in schools that are affiliated with the Maharashtra State Board.

<https://www.indcareer.com/schools/maharashtra-board-solutions-class-8-maths-practice-set-16-3-chapter-16-surface-area-and-volume/>

FAQs

Where do I get the Maharashtra State Board Books PDF For free download?

You can download the Maharashtra State Board Books from the eBalbharti official website, i.e. cart.ebalbharati.in or from this article.

Add image

How to Download Maharashtra State Board Books?

Students can get the Maharashtra Books for primary, secondary, and senior secondary classes from here. You can view or download the Maharashtra State Board Books from this page or from the official website for free of cost. Students can follow the detailed steps below to visit the official website and download the e-books for all subjects or a specific subject in different mediums.

Step 1: Visit the official website ebalbharati.in

Step 2: On the top of the screen, select "Download PDF textbooks"

Step 3: From the "Classes" section, select your class.

Step 4: From "Medium", select the medium suitable to you.

Step 5: All Maharashtra board books for class 11th will now be displayed on the right side.

Step 6: Click on the "Download" option to download the PDF book.

Who developed the Maharashtra State board books?

As of now, the MSCERT and Balbharti are responsible for the syllabus and textbooks of Classes 1 to 8, while Classes 9 and 10 are under the Maharashtra State Board of Secondary and Higher Secondary Education (MSBSHSE).

How many state boards are there in Maharashtra?

The Maharashtra State Board of Secondary & Higher Secondary Education, conducts the HSC and SSC Examinations in the state of Maharashtra through its nine Divisional Boards located at Pune, Mumbai, Aurangabad, Nasik, Kolhapur, Amravati, Latur, Nagpur and Ratnagiri.

<https://www.indcareer.com/schools/maharashtra-board-solutions-class-8-maths-practice-set-16-3-chapter-16-surface-area-and-volume/>

About IndCareer

IndCareer.com is a leading developer of online career guidance resources for the Indian marketplace. Established in 2007, IndCareer.com is currently used by over thousands of institutions across India, including schools, employment agencies, libraries, colleges and universities.

IndCareer.com is designed to assist you in making the right career decision - a decision that meets your unique interests and personality.

For any clarifications or questions you can write to **info@indcareer.com**

Postal Address

IndCareer.com
52, Shilpa Nagar,
Somalwada
Nagpur - 440015
Maharashtra, India

WhatsApp: +91 9561 204 888

Website: <https://www.indcareer.com>

<https://www.indcareer.com/schools/maharashtra-board-solutions-class-8-maths-practice-set-16-3-chapter-16-surface-area-and-volume/>