

Maharashtra Board Solutions Class 8-Maths

(Practice Set 15.6): Chapter 15- Area



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

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Maharashtra Board Solutions Class 8-Maths

(Practice Set 15.6): Chapter 15- Area

Class 8: Maths Chapter 15 solutions. Complete Class 8 Maths Chapter 15 Notes.

Maharashtra Board Solutions Class 8-Maths (Practice Set 15.6): Chapter 15- Area

Maharashtra Board 8th Maths Chapter 15, Class 8 Maths Chapter 15 solutions

Question 1.

Radii of the circles are given below, find their areas.

- i. 28 cm
- ii. 10.5 cm
- iii. 17.5 cm

Solution:

- i. Radius of the circle (r) = 28 cm ... [Given]

$$\text{Area of the circle} = \pi r^2$$

$$= 227 \times (28)^2$$

$$= 227 \times 28 \times 28$$

$$= 22 \times 4 \times 28$$

$$= 2464 \text{ sq. cm}$$

- ii. Radius of the circle (r) = 10.5 cm ... [Given]

$$\text{Area of the circle} = \pi r^2$$

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$$= 227 \times (10.5)^2$$

$$= 227 \times 10.5 \times 10.5$$

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

$$= 346.5 \text{ sq. cm}$$

iii. Radius of the circle (r) = 17.5 cm ... [Given]

$$\text{Area of the circle} = \pi r^2$$

$$= 227 \times (17.5)^2$$

$$= 227 \times 17.5 \times 17.5$$

$$= 22 \times 2.5 \times 17.5$$

$$= 962.5 \text{ sq. cm}$$

Question 2.

Areas of some circles are given below, find their diameters.

i. 176 sq.cm

ii. 394.24 sq. cm

iii. 12474 sq. cm

Solution:

i. Area of the circle = 176 sq. cm ... [Given]

$$\text{Area of the circle} = \pi r^2$$

$$\therefore 176 = 227 \times r^2$$

$$\therefore r^2 = 176 \times 722$$

$$\therefore r^2 = 56$$

$$\therefore r = \sqrt{56} \dots [\text{Taking square root of both sides}]$$

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$$\text{Diameter} = 2r = 2\sqrt{56} \text{ CM}$$

ii. Area of the circle = 394.24 sq. cm ... [Given]

$$\text{Area of the circle} = \pi r^2$$

$$\therefore 394.24 = \frac{22}{7} \times r^2$$

$$\therefore r^2 = 394.24 \times \frac{7}{22}$$

$$\therefore r^2 = \frac{394.24 \times 100}{1 \times 100} \times \frac{7}{22}$$

$$\therefore r^2 = \frac{39424}{100} \times \frac{7}{22}$$

$$\therefore r^2 = \frac{1792}{100} \times 7$$

$$\therefore r^2 = \frac{12544}{100}$$

$$\therefore r^2 = \frac{112^2}{10^2}$$

$$\therefore r = \frac{112}{10} \dots [\text{Taking square root of both sides}]$$

$$\therefore r = 11.2 \text{ cm}$$

$$\therefore \text{Diameter} = 2r = 2 \times 11.2 = 22.4 \text{ cm}$$

iii. Area of the circle = 12474 sq. cm ... [Given]

$$\text{Area of the circle} = \pi r^2$$

$$\therefore 12474 = 227 \times r^2$$

$$\therefore r^2 = 12474 \times 722$$

$$\therefore r^2 = 567 \times 7$$

$$\therefore r^2 = 3969$$

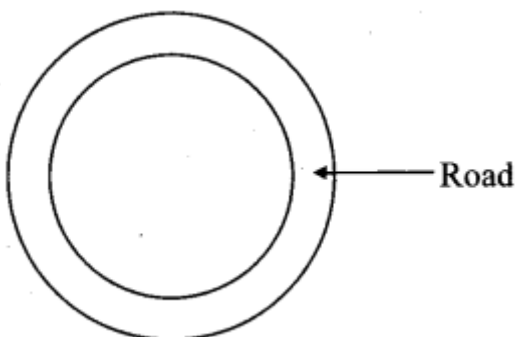
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$\therefore r = 63$...[Taking square root of both sides]

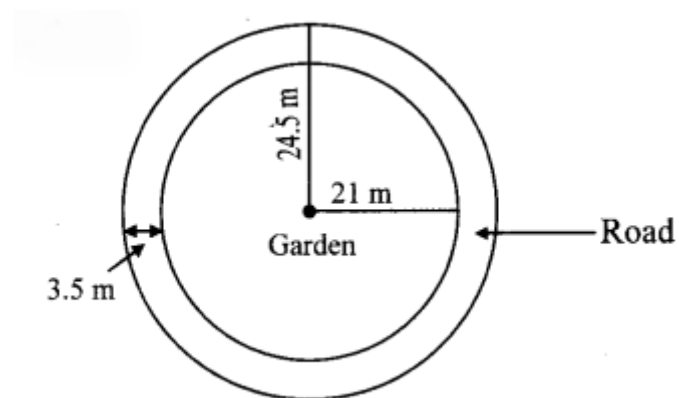
$\therefore \text{Diameter} = 2r = 2 \times 63 = 126\text{cm}$

Question 3.

Diameter of the circular garden is 42 m. There is a 3.5 m wide road around the garden. Find the area of the road.



Solution:



Diameter of the circular garden is 42 m. ... [Given]

$\therefore$ Radius of the circular garden (r) = $42 \div 2 = 21$ m

Width of the road = 3.5 m ...[Given]

Radius of the outer circle (R)

= radius (r) + width of the road

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$$= 21 + 3.5$$

$$= 24.5 \text{ m}$$

Area of the road = area of outer circle – area of circular garden

$$= \pi R^2 - \pi r^2$$

$$= \pi (R^2 - r^2)$$

$$= 227 [(24.5)^2 - (21)^2]$$

$$= 227 (24.5 + 21) (24.5 - 21)$$

$$\dots [\because a^2 - b^2 = (a+b)(a-b)]$$

$$= 227 \times 45.5 \times 3.5$$

$$= 22 \times 45.5 \times 0.5$$

$$= 500.50 \text{ sq. m}$$

$\therefore$ The area of the road is 500.50 sq. m.

Question 4.

Find the area of the circle if its circumference is 88 cm.

Solution:

Circumference of the circle = 88 cm ...[Given]

Circumference of the circle = $2\pi r$

$$\therefore 88 = 2 \times 22 \times r$$

$$\therefore r = 88 \div 2 \times 22 \therefore r = 14 \text{ cm}$$

$$\text{Area of the circle} = \pi r^2 = 22 \times (14)^2$$

$$= 22 \times 14 \times 14 = 22 \times 2 \times 14 = 616 \text{ sq. cm}$$

$\therefore$ The area of circle is 616 Sq cm

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Intext Questions and Activities

Question 1.

Draw a circle of radius 28mm. Draw any one triangle and draw a trapezium on the graph paper. Find the area of these figures by counting the number of small squares on the graph paper. Verify your answers using formula for area of these figures.

Observe that smaller the squares of graph paper, better is the approximation of area.
(Textbook pg. no. 105)

Solution:

(Students should do this activity on their own.)



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- Chapter 1- Rational and Irrational Numbers (Practice Set 1.3)
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- Chapter 7- Variation (Practice Set 7.2)
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- Chapter 9- Discount and Commission (Practice Set 9.1)
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- Chapter 16- Surface Area and Volume (Practice Set 16.2)
- Chapter 16- Surface Area and Volume (Practice Set 16.3)
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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.

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FAQs

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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.

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