

Maharashtra Board Solutions Class 8-Maths

(Practice Set 15.3): Chapter 15- Area



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Maharashtra Board Solutions Class 8-Maths

(Practice Set 15.3): Chapter 15- Area

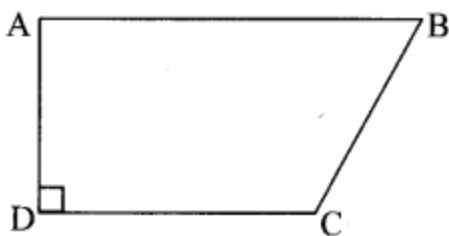
Class 8: Maths Chapter 15 solutions. Complete Class 8 Maths Chapter 15 Notes.

Maharashtra Board Solutions Class 8-Maths (Practice Set 15.3): Chapter 15- Area

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

Question 1.

In the given figure, $\square ABCD$ is a trapezium, side $AB \parallel$ side DC , $l(AB) = 13$ cm, $l(DC) = 9$ cm, $l(AD) = 8$ cm, find the area $\square ABCD$.



Solution:

$\square ABCD$ is a trapezium, side $AB \parallel$ side DC ,

$l(AB) = 13$ cm, $l(DC) = 9$ cm, $l(AD) = 8$ cm,

Area of a trapezium = $\frac{1}{2} \times$ sum of lengths of parallel sides $\times$ height

$$\therefore A(\square ABCD) = \frac{1}{2} \times [l(AB) + l(DC)] \times l(AD)$$

$$= \frac{1}{2} \times (13 + 9) \times 8$$

$$= \frac{1}{2} \times 22 \times 8$$

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$$= 11 \times 8$$

$$= 88 \text{ sq.cm}$$

$\therefore$ The area of $\square ABCD$ is 88 sq. cm.

[Note: The question is modified.]

Question 2.

Length of the two parallel sides of a trapezium are 8.5 cm and 11.5 cm respectively and its height is 4.2 cm, find its area.

Solution:

Length of the two parallel sides of a trapezium are 8.5 cm and 11.5 cm and its height is 4.2 cm.

Area of a trapezium

$$= 12 \times \text{sum of lengths of parallel sides} \times \text{height}$$

$$= 12 \times (8.5 + 11.5) \times 4.2$$

$$= 12 \times 20 \times 4.2$$

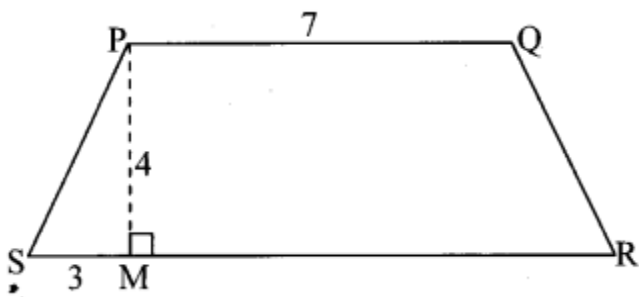
$$= 10 \times 4.2$$

$$= 42 \text{ sq. cm}$$

$\therefore$ The area of the trapezium is 42 sq. cm.

Question 3.

$\square PQRS$ is an isosceles trapezium. $l(PQ) = 7$ cm, $\text{seg } PM \perp \text{seg } SR$, $l(SM) = 3$ cm. Distance between two parallel sides is 4 cm, find the area of $\square PQRS$.



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Solution:

□ PQRS is an isosceles trapezium.

$l(PQ) = 7 \text{ cm}$, $\text{seg } PM \perp \text{seg } SR$,

$l(SM) = 3 \text{ cm}$, $l(PM) = 4 \text{ cm}$

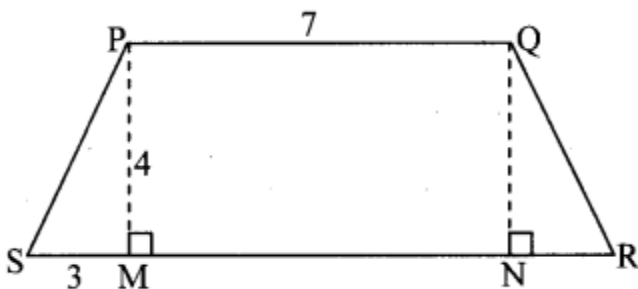
Draw $\text{seg } QN \perp \text{seg } SR$.

In □ PMNQ,

$\text{seg } PQ \parallel \text{seg } MN$

$\angle PMN = \angle QNM = 90^\circ$

$\therefore$ □ PMNQ is a rectangle.



Opposite sides of a rectangle are congruent.

$\therefore l(PM) = l(QN) = 4 \text{ cm}$ and

$l(PQ) = l(MN) = 7 \text{ cm}$

In $\triangle PMS$, $m\angle PMS = 90^\circ$

$\therefore [l(PS)]^2 = [l(PM)]^2 + [l(SM)]^2 \dots$ [Pythagoras theorem]

$\therefore [l(PS)]^2 = (4)^2 + (3)^2$

$\therefore [l(PS)]^2 = 16 + 9 = 25$

$\therefore l(PS) = \sqrt{25} = 5 \text{ cm}$

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...[Taking square root of both sides]

□ PQRS is an isosceles trapezium.

$$\therefore l(PS) = l(QR) = 5 \text{ cm}$$

In $\triangle QNR$, $m \angle QNR = 90^\circ$

$$\therefore [l(QR)]^2 = [l(QN)]^2 + [l(NR)]^2$$

... [Pythagoras theorem]

$$\therefore (5)^2 = (4)^2 + [l(NR)]^2$$

$$\therefore 25 = 16 + [l(NR)]^2$$

$$\therefore [l(NR)]^2 = 25 - 16 = 9$$

$$\therefore l(NR) = \sqrt{9} = 3 \text{ cm}$$

...[Taking square root of both sides]

$$l(SR) = l(SM) + l(MN) + l(NR)$$

$$= 3 + 7 + 3$$

$$= 13 \text{ cm}$$

Area of a trapezium

= $12 \times \text{sum of lengths of parallel sides} \times \text{height}$

$$\therefore A(\square PQRS) = 12 \times [l(PQ) + l(SR)] \times l(PM)$$

$$= 12 \times (7 + 13) \times 4$$

$$= 12 \times 20 \times 4$$

$$= 40 \text{ sq.cm}$$

$\therefore$ The area of $\square PQRS$ is 40 sq. cm.



Maharashtra Board Solutions

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- 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)
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- Chapter 2- Parallel Lines and Transversals (Practice Set 2.2)
- Chapter 2- Parallel Lines and Transversals (Practice Set 2.3)
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- 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)

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- 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)

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- 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)

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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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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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