

Maharashtra Board Solutions Class 8-Maths (Practice Set 17.2): Chapter 17- Factorisation of Algebraic Expressions



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Maharashtra Board Solutions Class 8-Maths

(Practice Set 17.2): Chapter 17- Factorisation of Algebraic Expressions

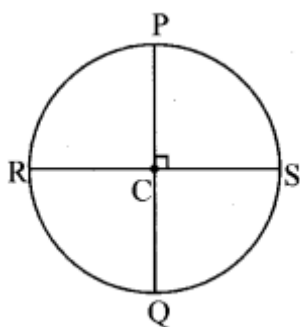
Class 8: Maths Chapter 17 solutions. Complete Class 8 Maths Chapter 17 Notes.

Maharashtra Board Solutions Class 8-Maths (Practice Set 17.2): Chapter 17- Factorisation of Algebraic Expressions

Maharashtra Board 8th Maths Chapter 17, Class 8 Maths Chapter 17 solutions

Question 1.

The diameters PQ and RS of the circle with centre C are perpendicular to each other at C. State, why arc PS and arc SQ are congruent. Write the other arcs which are congruent to arc PS.



Solution:

diameter PQ $\perp$ diameter RS ... [Given]

$$\therefore m\angle PCS = m\angle SCQ = m\angle PCR = m\angle RCQ = 90^\circ$$

The measure of the angle subtended at the centre by an arc is the measure of the arc.

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$$\therefore m(\text{arc PS}) = m\angle PCS = 90^\circ \dots (i)$$

$$m(\text{arc SQ}) = m\angle SCQ = 90^\circ \dots (ii)$$

$$\therefore m(\text{arc PS}) = m(\text{arc SQ}) \dots [\text{From (i) and (ii)}]$$

$\therefore \text{arc PS} \cong \text{arc SQ} \dots$ [If the measures of two arcs of a circle are same, then the two arcs are congruent]

$$m(\text{arc PR}) = m\angle PCR = 90^\circ \dots (iii)$$

$$m(\text{arc RQ}) = m\angle RCQ = 90^\circ \dots (iv)$$

$$\therefore m(\text{arc PS}) = m(\text{arc PR}) = m(\text{arc RQ}) \dots [\text{From (i), (iii) and (iv)}]$$

$$\therefore \text{arc PS} \cong \text{arc PR} \cong \text{arc RQ}$$

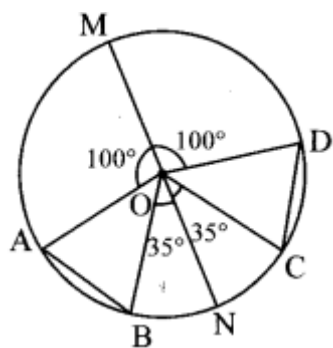
$\dots$ [If the measures of two arcs of a circle are same, then the two arcs are congruent]

$\therefore \text{arc PR and arc RQ are congruent to arc PS.}$

Question 2.

In the given figure, O is the centre of the circle whose diameter is MN. Measures of some central angles are given in the figure.

- $m\angle AOB$ and $m\angle COD$
- Show that $\text{arc AB} \cong \text{arc CD}$
- Show that $\text{chord AB} \cong \text{chord CD}$



Solution:

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i. Seg MN is the diameter of the circle. ... [Given]

$$\therefore m\angle AOM + m\angle AON = 180^\circ \dots [\text{Angles in a linear pair}]$$

$$\therefore m\angle AOM + (m\angle AOB + m\angle BON) = 180^\circ \dots [\text{Angle addition property}]$$

$$\therefore 100^\circ + m\angle AOB + 35^\circ = 180^\circ$$

$$\dots [\because m\angle AOM = 100^\circ, m\angle BON = 35^\circ]$$

$$\therefore m\angle AOB + 135^\circ = 180^\circ$$

$$\therefore m\angle AOB = 180^\circ - 135^\circ$$

$$\therefore m\angle AOB = 45^\circ \dots (i)$$

Also, $m\angle DOM + m\angle DON = 180^\circ \dots [\text{Angles in a linear pair}]$

$$\therefore m\angle DOM + (m\angle COD + m\angle CON) = 180^\circ \dots [\text{Angle addition property}]$$

$$\therefore 100^\circ + m\angle COD + 35^\circ = 180^\circ$$

$$\dots [\because m\angle DOM = 100^\circ, m\angle CON = 35^\circ]$$

$$\therefore m\angle COD + 135^\circ = 180^\circ$$

$$\therefore m\angle COD = 180^\circ - 135^\circ$$

$$\therefore m\angle COD = 45^\circ \dots (ii)$$

ii. $m(\text{arc AB}) = m\angle AOB = 45^\circ \dots [\text{From (i)}]$

$m(\text{arc DC}) = m\angle DOC = 45^\circ \dots [\text{From (ii)}]$

$$\therefore m(\text{arc AB}) = m(\text{arc DC}) \dots [\text{From (i) and (ii)}]$$

$$\therefore \text{arc AB} \cong \text{arc CD}$$

... [If the measures of two arcs of a circle are same, then the two arcs are congruent]

iii. $\text{arc AB} \cong \text{arc CD}$

$\therefore \text{chord AB} \cong \text{chord CD} \dots [\text{The chords corresponding to congruent arcs are congruent}]$

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Intext Questions and Activities

Question 1.

If the measures of two arcs of a circle are same, then two arcs are congruent. Verify this property using tracing paper. (Textbook pg. no. 117)

Solution:

[Students should attempt the above activities on their own.]

Question 2.

With the help of following activity find out the properties of the chord and the corresponding arc.

i. a. Draw a circle with centre O.

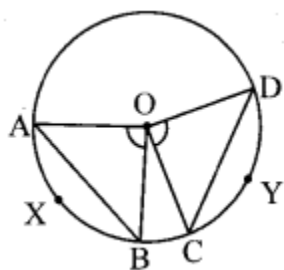
b. Draw $\angle COD$ and $\angle AOB$ of same measure.

You will find that the arc AXB and arc CYD are congruent.

c. Draw chords AB and CD.

d. Using compass experience that the length of chord AB and chord CD is also same.

(Textbook pg. no. 117)



Solution:

[Students should attempt the above activities on their own.]

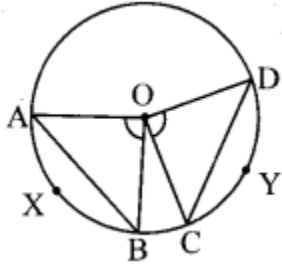
ii. a. Draw a circle with centre C.

b. Draw the congruent chords AB and DE of the circle. Draw the radii CA, CB, CD and CE.

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c. Check that $\angle ACB$ and $\angle DCE$ are congruent.

d. Hence show that measure of arc AB and arc DE is equal. Hence these arcs are congruent.
(Textbook pg. no. 117)



Solution:

[Students should attempt the above activities on their own.]



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- Chapter 1- Rational and Irrational Numbers (Practice Set 1.4)
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- Chapter 7- Variation (Practice Set 7.3)
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- Chapter 14- Compound Interest (Practice Set 14.1)
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- 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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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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