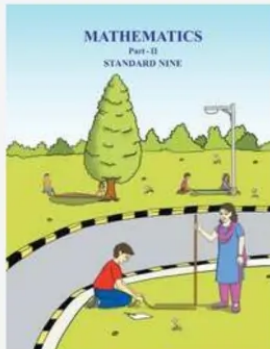


Maharashtra Board Solutions Class 9-Maths

(Part 2): Chapter 3.2- Triangles

BOOK SOLUTIONS
CLASS 9
MATHS (PART 2)

CHAPTER 3.2
Triangles



Maharashtra Board Solutions→

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

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Maharashtra Board Solutions Class 9-Maths

(Part 2): Chapter 3.2- Triangles

Class 9: Maths Chapter 3.2 solutions. Complete Class 9 Maths Chapter 3.2 Notes.

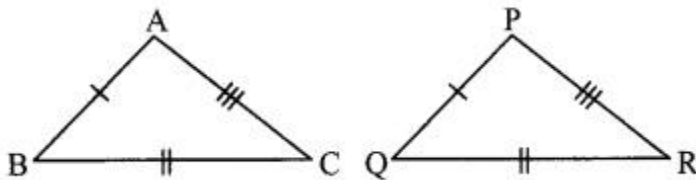
Maharashtra Board Solutions Class 9-Maths (Part 2): Chapter 3.2- Triangles

Maharashtra Board 9th Maths Chapter 3.2, Class 9 Maths Chapter 3.2 solutions

Question 1.

In each of the examples given below, a pair of triangles is shown. Equal parts of triangles in each pair are marked with the same signs. Observe the figures and state the test by which the triangles in each pair are congruent.

i.

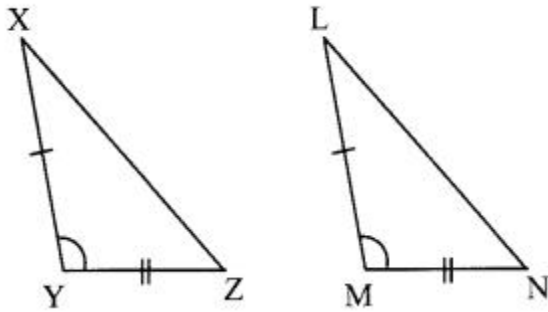


By SSS test

$$\triangle ABC \cong \triangle PQR$$

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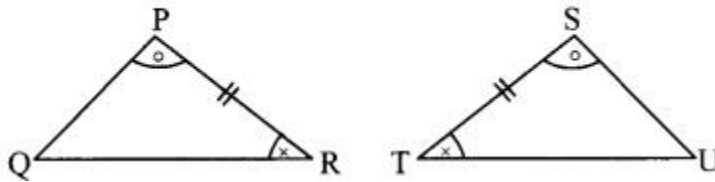
ii.



By SAS test

$$\triangle XYZ \cong \triangle LMN$$

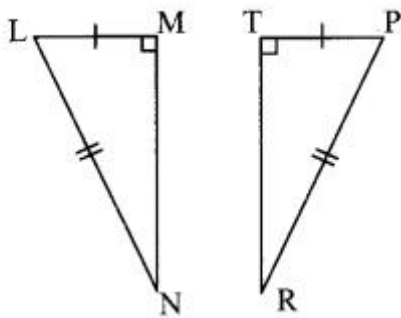
iii.



By ASA test

$$\triangle PQR \cong \triangle STU$$

iv.



By hypotenuse side test

$$\triangle LMN \cong \triangle PTR$$

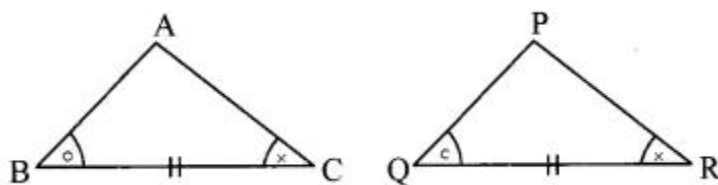
Question 2.

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Observe the information shown in pairs of triangles given below. State the test by which the two triangles are congruent. Write the remaining congruent parts of the triangles.

Solution:

i.



From the information shown in the figure,

In $\triangle ABC$ and $\triangle PQR$,

$$\angle ABC \cong \angle PQR$$

$$\text{seg } BC \cong \text{seg } QR$$

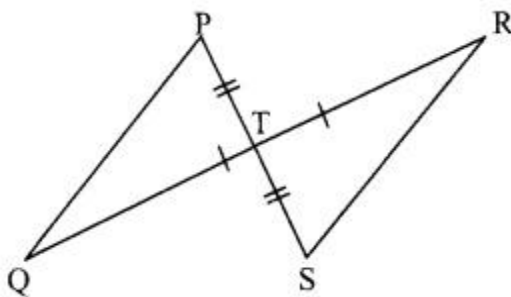
$$\angle ACB \cong \angle PRQ$$

$$\therefore \triangle ABC \cong \triangle PQR \text{ [ASA test]}$$

$$\therefore \angle BAC \cong \angle QPR \text{ [Corresponding angles of congruent triangles]}$$

$$\text{seg } AB \cong \text{seg } PQ \text{ and seg } AC \cong \text{seg } PR \text{ [Corresponding sides of congruent triangles]}$$

ii.



From the information shown in the figure,

In $\triangle PTQ$ and $\triangle STR$,

$$\text{seg } PT \cong \text{seg } ST$$

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$\angle PTQ \cong \angle STR$ [Vertically opposite angles]

$\text{seg } TQ \cong \text{seg } TR$

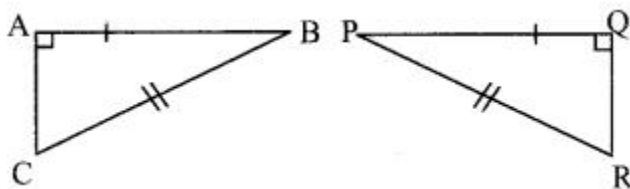
$\therefore \triangle PTQ \cong \triangle STR$ [SAS test]

$\therefore \angle TPQ \cong \angle TSR$ and $\angle TQP \cong \angle TRS$ [Corresponding angles of congruent triangles]

$\text{seg } PQ \cong \text{seg } SR$ [Corresponding sides of congruent triangles]

Question 3.

From the information shown in the figure, state the test assuring the congruence of $\triangle ABC$ and $\triangle PQR$. Write the remaining congruent parts of the triangles.



Solution:

In $\triangle BAC$ and $\triangle PQR$,

$\text{seg } BA \cong \text{seg } PQ$

$\text{seg } BC \cong \text{seg } PR$

$\angle BAC \cong \angle PQR = 90^\circ$ [Given]

$\therefore \triangle BAC \cong \triangle PQR$ [Hypotenuse side test]

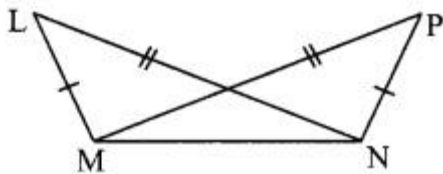
$\therefore \text{seg } AC \cong \text{seg } QR$ [c.s.c.t.]

$\angle ABC \cong \angle QPR$ and $\angle ACB \cong \angle QRP$ [c.a.c.t.]

Question 4.

As shown in the adjoining figure, in $\triangle LMN$ and $\triangle PNM$, $LM = PN$, $LN = PM$. Write the test which assures the congruence of the two triangles. Write their remaining congruent parts.

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**Solution:**

In $\triangle LMN$ and $\triangle PNM$,

$\text{seg LM} \cong \text{seg PN}$

$\text{seg LN} \cong \text{seg PM}$ [Given]

$\text{seg MN} \cong \text{seg NM}$ [Common side]

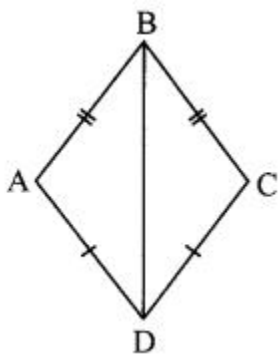
$\therefore \triangle LMN \cong \triangle PNM$ [SSS test]

$\therefore \angle LMN \cong \angle PNM$,

$\therefore \angle MLN \cong \angle NPM$, and $\angle LNM \cong \angle PMN$ [c.a.c.t.]

Question 5.

In the adjoining figure, $\text{seg AB} \cong \text{seg CB}$ and $\text{seg AD} \cong \text{seg CD}$. Prove that $\triangle ABD \cong \triangle CBD$.

**Solution:**

proof:

In $\triangle ABD$ and $\triangle CBD$,

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$\text{seg AB} \cong \text{seg CB}$

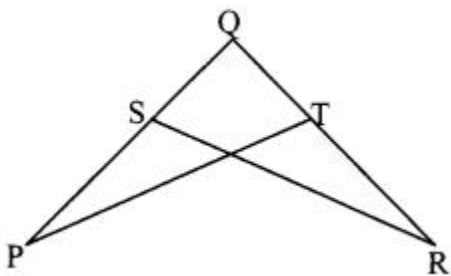
$\text{seg AD} \cong \text{seg CD}$ [Given]

$\text{seg BD} \cong \text{seg BD}$ [Common side]

$\therefore \triangle ABD \cong \triangle CBD$ [SSS test]

Question 6.

In the adjoining figure, $\angle P \cong \angle R$, $\text{seg PQ} \cong \text{seg RQ}$. Prove that $\triangle PQT \cong \triangle RQS$.



Proof:

In $\triangle PQT$ and $\triangle RQS$,

$\angle P \cong \angle R$

$\text{seg PQ} \cong \text{seg RQ}$ [Given]

$\angle Q \cong \angle Q$ [Common angle]

$\therefore \triangle PQT \cong \triangle RQS$ [ASA test]



Maharashtra Board Solutions

Class 9 Maths

Part 2

- Chapter 1.1- Basic Concepts in Geometry
- Chapter 1.2- Basic Concepts in Geometry
- Chapter 1.3- Basic Concepts in Geometry
- Chapter 2.1- Parallel Lines
- Chapter 2.2- Parallel Lines
- Chapter 3.1- Triangles
- Chapter 3.2- Triangles
- Chapter 3.3- Triangles
- Chapter 3.4- Triangles
- Chapter 3.5- Triangles
- Chapter 4.1- Constructions of Triangles
- Chapter 4.2- Constructions of Triangles
- Chapter 4.3- Constructions of Triangles
- Chapter 5.1- Quadrilaterals
- Chapter 5.2- Quadrilaterals
- Chapter 5.3- Quadrilaterals
- Chapter 5.4- Quadrilaterals
- Chapter 5.5- Quadrilaterals
- Chapter 6.1- Circle
- Chapter 6.2- Circle
- Chapter 6.3- Circle
- Chapter 7.1- Co-ordinate Geometry
- Chapter 7.2- Co-ordinate Geometry
- Chapter 8.1- Trigonometry
- Chapter 8.2- Trigonometry
- Chapter 9.1- Surface Area and Volume
- Chapter 9.2- Surface Area and Volume
- Chapter 9.3- Surface Area and Volume

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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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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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