

Maharashtra Board Solutions Class 8-Maths (Practice Set 13.2): Chapter 13- Congruence of Triangles



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Maharashtra Board Solutions Class 8-Maths (Practice Set 13.2): Chapter 13- Congruence of Triangles

Class 8: Maths Chapter 13 solutions. Complete Class 8 Maths Chapter 13 Notes.

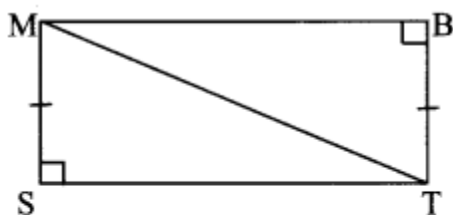
Maharashtra Board Solutions Class 8-Maths (Practice Set 13.12): Chapter 13- Congruence of Triangles

Maharashtra Board 8th Maths Chapter 13, Class 8 Maths Chapter 13 solutions

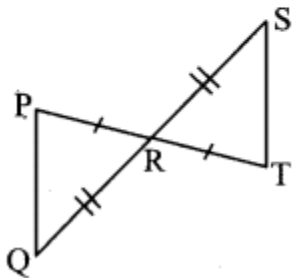
Question 1.

In each pair of triangles given below, parts shown by identical marks are congruent.
State the test and the one-to-one correspondence of vertices by which triangles in each pair are congruent. Also state the remaining congruent parts.

i.

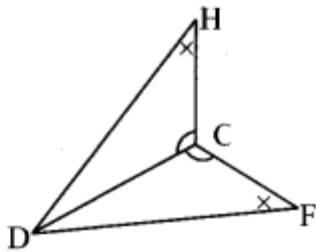


ii.



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iii.

**Solution:**i. In $\triangle MST$ and $\triangle TBM$, $\therefore$ side $MS \cong$ side TB ... [Given] $m\angle MST = m\angle TBM = 90^\circ$... [Given]hypotenuse $MT \cong$ hypotenuse MT

...[Common side]

 $\therefore \triangle MST \cong \triangle TBM$...[by hypotenuse-side test] $\therefore$ side $ST \cong$ side BM ...[Corresponding sides of congruent triangles] $\angle SMT \cong \angle BTM$...[Corresponding sides of congruent triangles] $\angle STM \cong \angle BMT$...[Corresponding sides of congruent triangles]ii. In $\triangle PRQ$ and $\triangle TRS$,side $PR \cong$ side TR ... [Given] $\angle PRQ \cong \angle TRS$...[Vertically opposite angles]side $RQ \cong$ side RS ... [Given] $\therefore \triangle PRQ \cong \triangle TRS$...[by SAS test] $\therefore$ side $PQ \cong$ side TS ...[Corresponding sides of congruent triangles] $\angle RPQ \cong \angle RTS$...[Corresponding sides of congruent triangles] $\angle PQR \cong \angle TSR$...[Corresponding sides of congruent triangles]

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iii. In $\triangle DCH$ and $\triangle DCF$,

$$\angle DCH \cong \angle DCF \dots [\text{Given}]$$

$$\angle DHC \cong \angle DFC \dots [\text{Given}]$$

side $DC \cong$ side $DC \dots [\text{Common side}]$

$$\therefore \triangle DCH \cong \triangle DCF \dots [\text{by AAS test}]$$

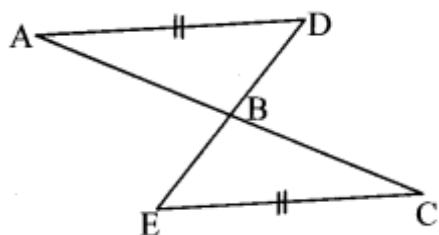
$$\therefore \text{side } HC \cong \text{side } FC \dots [\text{Corresponding sides of congruent triangles}]$$

side $DH \cong$ side $DF \dots [\text{Corresponding sides of congruent triangles}]$

$$\angle HDC \cong \angle FDC \dots [\text{Corresponding sides of congruent triangles}]$$

Question 2.

In the given figure, $\text{seg } AD \cong \text{seg } EC$. Which additional information is needed to show that $\triangle ABD$ and $\triangle ECB$ will be congruent by AAS test?



Solution:

In $\triangle ABD$ and $\triangle CBE$,

$$\therefore \text{seg } AD \cong \text{seg } CE \dots [\text{Given}]$$

$$\angle ABD \cong \angle CBE \dots [\text{Vertically opposite angles}]$$

$\therefore$ The necessary condition for the two triangles to be congruent by AAS test is

$$\angle ADB \cong \angle CEB, \text{ or}$$

$$\angle DAB \cong \angle ECB$$

Intext Questions and Activities

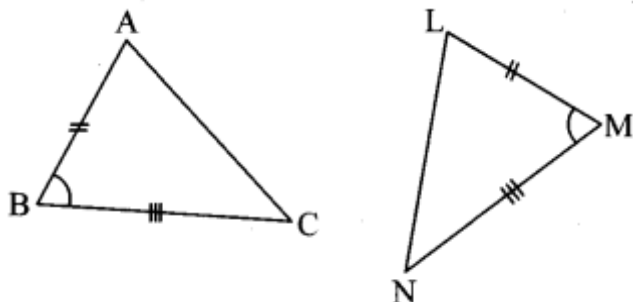
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Question 1.

Draw $\triangle ABC$ and $\triangle LMN$ such that two pairs of their sides and the angles included by them are congruent.

Draw $\triangle ABC$ and $\triangle LMN$, $I(AB) = I(LM)$, $I(BC) = I(MN)$, $m\angle ABC = m\angle LMN$.

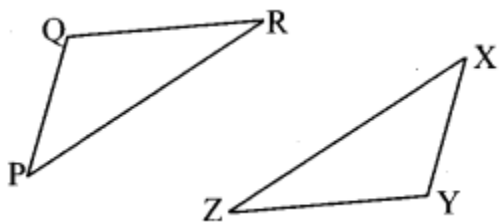
Copy $\triangle ABC$ on a tracing paper. Place the paper on $\triangle LMN$ in such a way that point A coincides with point L, side AB overlaps side LM. What do you notice? (Textbook pg. no. 83)

**Solution:**

We notice that $\triangle ABC \cong \triangle LMN$.

Question 2.

Draw $\triangle PQR$ and $\triangle XYZ$ such that $I(PQ) = I(XY)$, $I(QR) = I(YZ)$, $I(RP) = I(ZX)$. Copy $\triangle PQR$ on a tracing paper. Place it on $\triangle XYZ$ observing the correspondence $P \leftrightarrow X$, $Q \leftrightarrow Y$, $R \leftrightarrow Z$. What do you notice? (Textbook pg. no. 84)

**Solution:**

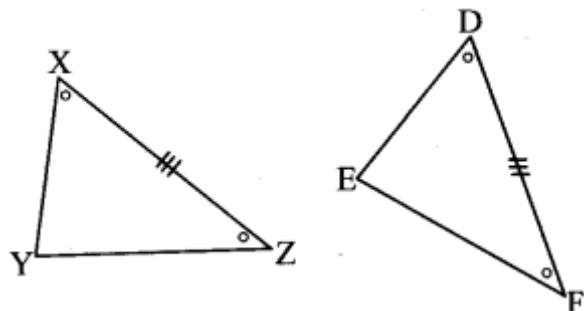
We notice that $\triangle PQR \cong \triangle XYZ$.

Question 3.

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Draw $\triangle XYZ$ and $\triangle DEF$ such that, $l(XZ) = l(DF)$, $\angle X \cong \angle D$ and $\angle Z \cong \angle F$.

Copy $\triangle XYZ$ on a tracing paper and place it over $\triangle DEF$. What do you notice?(Textbook pg. no. 84)

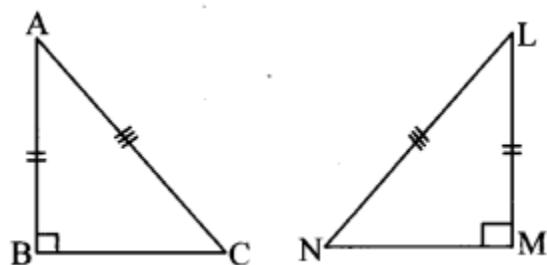


Solution:

We notice that $\triangle XYZ \cong \triangle DEF$ in the correspondence $X \leftrightarrow D$, $Y \leftrightarrow E$, $Z \leftrightarrow F$.

Question 4.

Draw two right angled triangles such that a side and the hypotenuse of one is congruent with the corresponding parts of the other. Copy one triangle on tracing paper and place it over the other. What do you notice? (Textbook pg. no. 84)



Solution:

We notice that the two triangles are congruent.

(Students should draw figures and verify the answers.)



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- Chapter 1- Rational and Irrational Numbers (Practice Set 1.4)
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- 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)
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- Chapter 6- Factorisation of Algebraic Expressions (Practice Set 6.4)
- Chapter 7- Variation (Practice Set 7.1)

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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)

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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