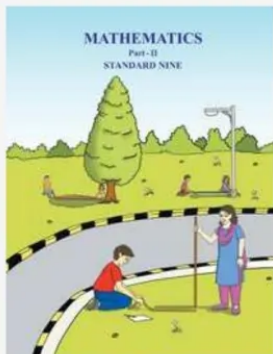


Maharashtra Board Solutions Class 9-Maths

(Part 2): Chapter 4.2- Constructions of Triangles

BOOK SOLUTIONS
CLASS 9
MATHS (PART 2)

CHAPTER 4.2
Constructions of 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 4.2- Constructions of Triangles

Class 9: Maths Chapter 4.2 solutions. Complete Class 9 Maths Chapter 4.2 Notes.

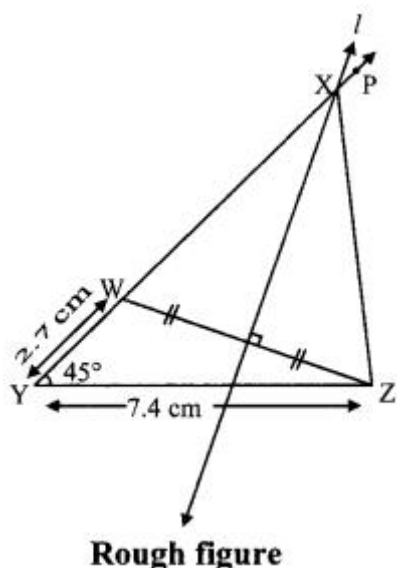
Maharashtra Board Solutions Class 9-Maths (Part 2): Chapter 4.2- Constructions of Triangles

Maharashtra Board 9th Maths Chapter 4.2, Class 9 Maths Chapter 4.2 solutions

Question 1.

Construct $\triangle XYZ$, such that $YZ = 7.4$ cm, $\angle XYZ = 45^\circ$ and $XY - XZ = 2.7$ cm.

Solution:



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Here, $XY - XZ = 2.7 \text{ cm}$

$$\therefore XY > XZ$$

As shown in the rough figure draw seg $YZ = 7.4 \text{ cm}$

Draw a ray YP making an angle of 45° with YZ

Take a point W on ray YP , such that

$$YW = 2.7 \text{ cm.}$$

Now, $XY - XW = YW$ [Y-W-X]

$$\therefore XY - XW = 2.7 \text{ cm(i)}$$

Also, $XY - XZ = 2.7 \text{ cm(ii)}$ [Given]

$$\therefore XY - XW = XY - XZ \text{ [From (i) and (ii)]}$$

$$\therefore XW = XZ$$

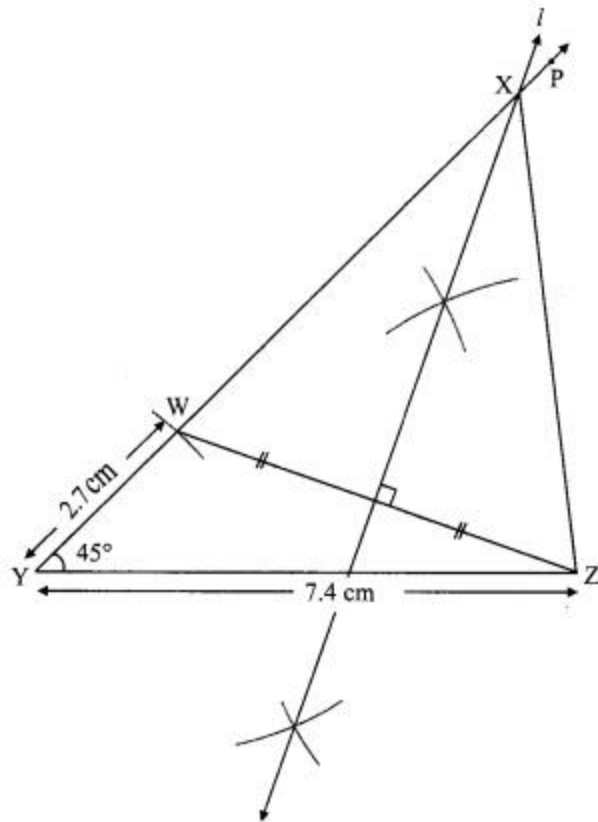
$\therefore$ Point X is on the perpendicular bisector of seg ZW

$\therefore$ Point X is the intersection of ray YP and the perpendicular bisector seg ZW

Steps of construction:

- i. Draw seg YZ of length 7.4 cm .
- ii. Draw ray YP , such that $\angle ZYP = 45^\circ$.
- iii. Mark point W on ray YP such that $l(YW) = 2.7 \text{ cm}$.
- iv. Join points W and Z .
- v. Join the points X and Z .

Hence, $\triangle XYZ$ is the required triangle.

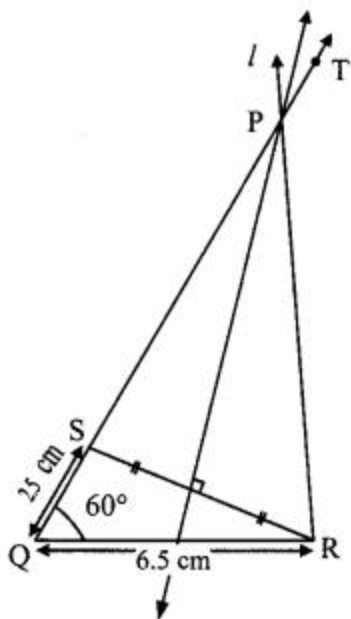


Question 2.

Construct ΔPQR , such that $QR = 6.5$ cm, $\angle PQR = 60^\circ$ and $PQ - PR = 2.5$ cm.

Solution:

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Rough figure

Here, $PQ - PR = 2.5 \text{ cm}$

$\therefore PQ > PR$

As shown in the rough figure draw seg $QR = 6.5 \text{ cm}$

Draw a ray QT making an angle of 60° with QR

Take a point S on ray QT , such that $QS = 2.5 \text{ cm}$.

Now, $PQ - PS = QS$ [Q-S-T]

$\therefore PQ - PS = 2.5 \text{ cm}$ (i) [Given]

Also, $PQ - PR = 2.5 \text{ cm}$ (ii) [From (i) and (ii)]

$\therefore PQ - PS = PQ - PR$

$\therefore PS = PR$

$\therefore$ Point P is on the perpendicular bisector of seg RS

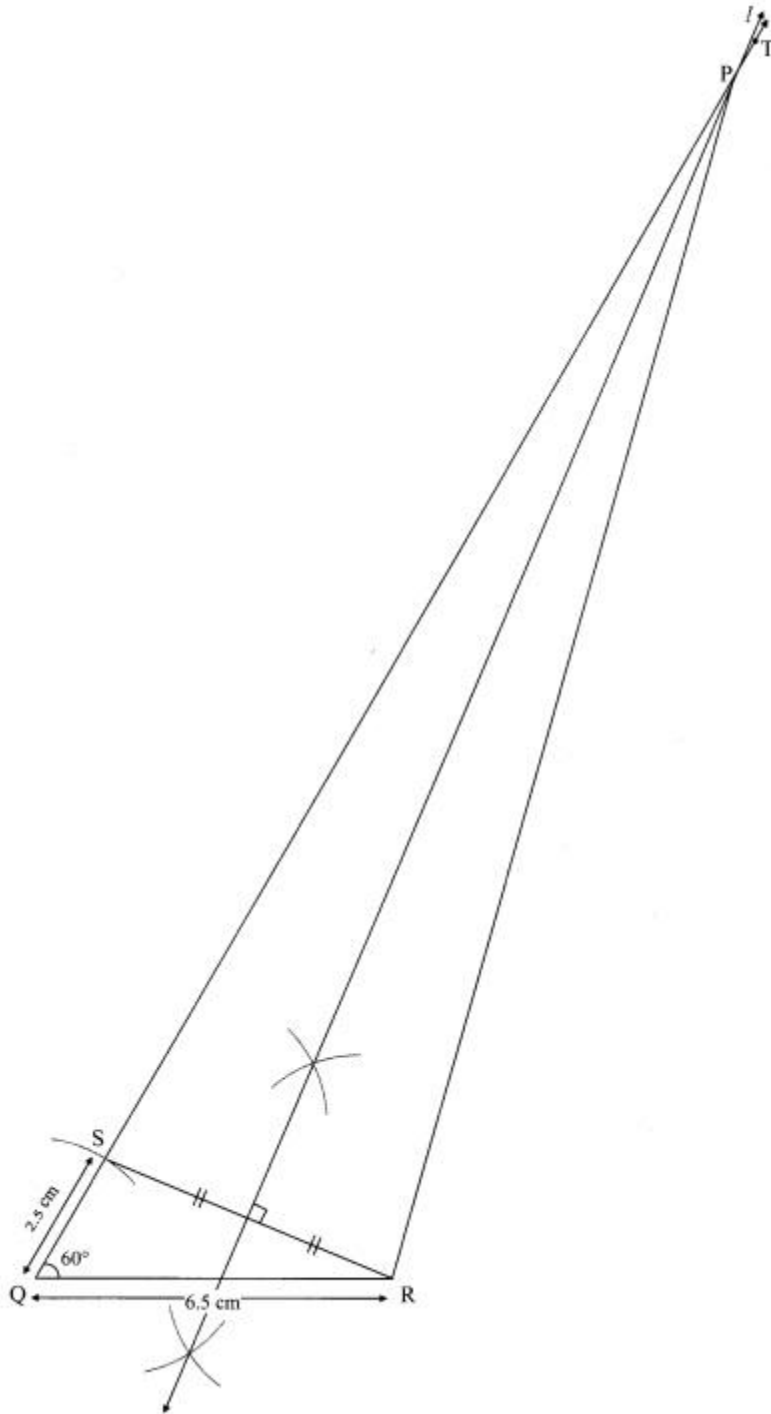
$\therefore$ Point P is the intersection of ray QT and the perpendicular bisector of seg RS

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Steps of construction:

- i. Draw seg QR of length 6.5 cm.
- ii. Draw ray QT, such that $\angle RQT = 60^\circ$.
- iii. Mark point S on ray QT such that $l(QS) = 2.5$ cm.
- iv. Join points S and R.
- v. Draw perpendicular bisector of seg SR intersecting ray QT. Name the point as P.
- vi. Join the points P and R.

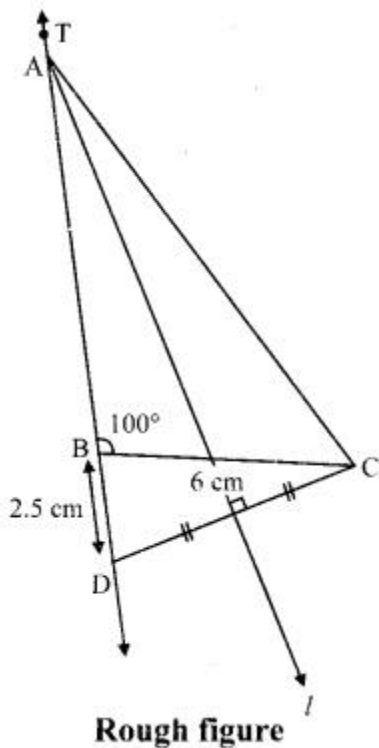
Hence, ΔPQR is the required triangle.



Question 3.

Construct $\triangle ABC$, such that $BC = 6$ cm, $\angle ABC = 100^\circ$ and $AC - AB = 2.5$ cm.

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Solution:

Here, $AC - AB = 2.5 \text{ cm}$

$\therefore AC > AB$

As shown in the rough figure draw seg $BC = 6 \text{ cm}$

Draw a ray BT making an angle of 100° with BC .

Take a point D on opposite ray of BT , :

such that $BD = 2.5 \text{ cm}$.

Now, $AD - AB = BD$ [A-B-D]

$\therefore AD - AB = 2.5 \text{ cm} \dots\dots(i)$

Also, $AC - AB = 2.5 \text{ cm} \dots\dots(ii)$ [Given]

$\therefore AD - AB = AC - AB$ [From (i) and (ii)]

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$\therefore AD = AC$

$\therefore$ Point A is on the perpendicular bisector of seg DC

$\therefore$ Point A is the intersection of ray BT and the perpendicular bisector of seg DC

Steps of construction:

i. Draw seg BC of length 6 cm.

ii. Draw ray BT, such that $\angle CBT = 100^\circ$.

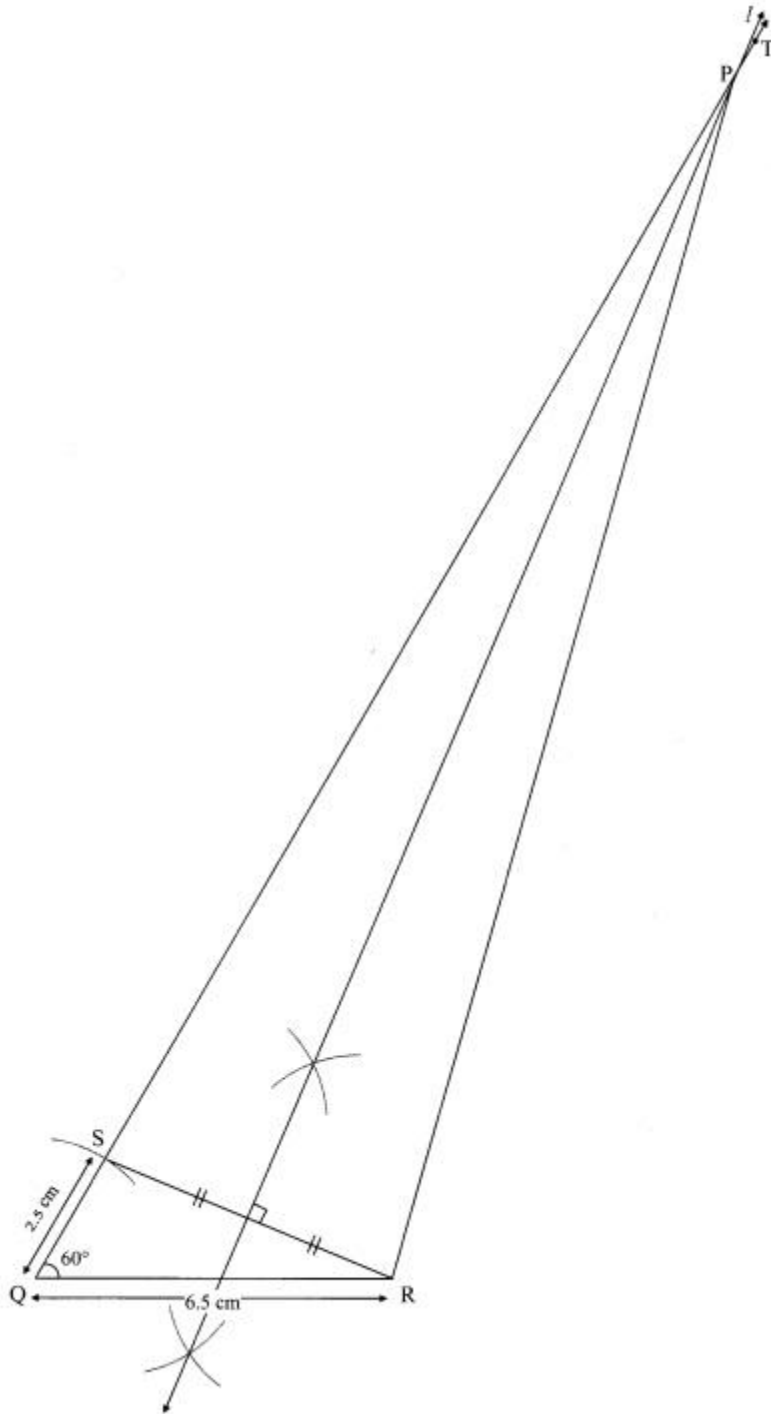
iii. Take point D on opposite ray of BT such that $l(BD) = 2.5$ cm.

iv. Join the points D and C.

v. Draw the perpendicular bisector of seg DC intersecting ray BT. Name the point as A.

vi. Join the points A and C.

Hence, $\triangle ABC$ is the required triangle.



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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
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- Chapter 8.2- Trigonometry
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- 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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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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