

Worksheet: Triangles

Haryana State Board · Class 9 · Mathematics · 13 questions · 28 marks

Name: _____

Date: _____

Score: _____ / 28

Q1. In $\triangle ABC$ and $\triangle PQR$, $AB = PQ$, $BC = QR$, $AC = PR$. Which congruence rule applies? [1 mark]

Q2. Two right triangles have hypotenuses 13 cm each and one leg 5 cm each. Which rule proves congruence? [1 mark]

Q3. A triangle has all sides equal. Classify it by sides and by angles. [1 mark]

Q4. Can sides 4, 5, 10 form a triangle? [1 mark]

Q5. In $\triangle ABC$, $A = 90^\circ$, $B = 60^\circ$, $C = 30^\circ$. Order the sides from longest to shortest. [1 mark]

Q6. In $\triangle ABC$ and $\triangle PQR$, $AB = PQ$, $B = Q$, $BC = QR$. Are the triangles congruent? State the rule. [2 marks]

Q7. In $\triangle ABC$, $AB = AC$ and $A = 50^\circ$. Find B and C . [2 marks]

Q8. In $\triangle ABC$, $B = C = 55^\circ$. Show that $AB = AC$. [2 marks]

Q9. Three sides of a triangle are 6 cm, 8 cm, x cm. Find the range of possible values of x. [3 marks]

Q10. In $\triangle ABC$, AD is the median to BC (so D is midpoint of BC). If $AB = AC$, prove $\triangle ABD \cong \triangle ACD$ and conclude $\angle B = \angle C$. [3 marks]

Q11. In two right triangles $\triangle ABC$ (right-angled at B) and $\triangle PQR$ (right-angled at Q), the hypotenuses AC and PR are equal, and one leg $AB = PQ$. Prove the triangles are congruent. [3 marks]

Q12. Prove: if a point P is equidistant from two points A and B, then P lies on the perpendicular bisector of AB. [4 marks]

Q13. In $\triangle ABC$, $AB = AC$. The bisectors of B and C meet at point O. Prove that AO bisects $\angle A$. [4 marks]
