Worksheet: Triangles

NIOS · Class 9 · Mathematics · 13 questions · 28 marks

Name: _____ Date: _____ Score: _____ / 28

Q1. In △ABC and △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 △ABC, A = 90°, B = 60°, C = 30°. Order the sides from longest to shortest. *[1 mark]*

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

Q7. In △ABC, AB = AC and A = 50°. Find B and C. *[2 marks]*

Q8. In △ABC, B = C = 55°. 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 △ABC, AD is the median to BC (so D is midpoint of BC). If AB = AC, prove △ABD ≅ △ACD and conclude ∠ABD = ∠ACD. *[3 marks]*

Q11. In two right triangles △ABC (right-angled at B) and △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 △ABC, AB = AC. The bisectors of ∠B and ∠C meet at point O. Prove that AO bisects ∠A. *[4 marks]*