GRADE 10 · EUCLIDEAN GEOMETRY

Euclidean Geometry Riders: Proving It, With Reasons (Grade 10)

WORKSHEET

Name: ..... Class: .....

Date: .....

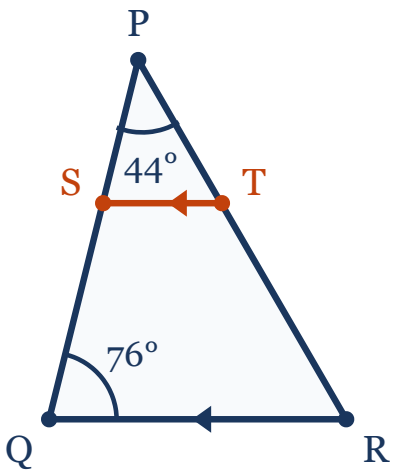
MARK ____ / 30

Answer all questions. Show all your working — marks are awarded for method as well as the final answer.

1 Write down the reason you would quote for the statement "$x = 65°$" if the two angles are on opposite sides of a transversal, between two parallel lines AB and CD. (2)

2 Why is a correct angle written with no reason usually worth only half the marks? (2)

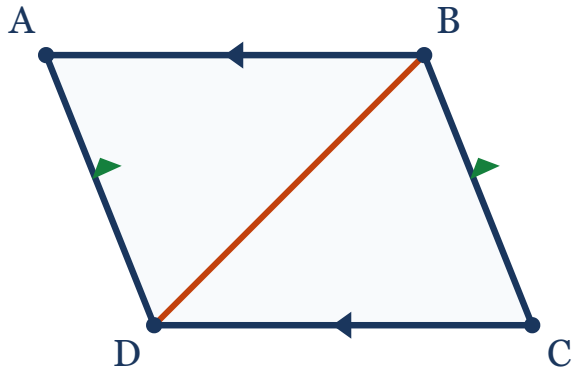
3 In △PQR, ST ∥ QR with S on PQ and T on PR. $\hat{P} = 44°$ and $\hat{Q} = 76°$. Determine, with reasons, the size of $P\hat{S}T$. (3)



4 Using the same triangle, determine, with a reason, the size of $\hat{R}$. (3)

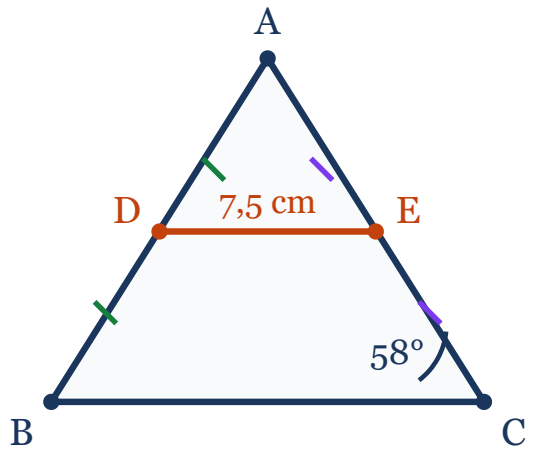
5 List the FOUR conditions for congruency and state which one applies only to right-angled triangles. (4)

6 ABCD is a parallelogram with diagonal BD drawn. Prove that △ABD ≡ △CDB. **(4)**



7 State THREE different ways of proving that a quadrilateral is a parallelogram. **(3)**

8 In △ABC, D and E are the midpoints of AB and AC. If DE = 7,5 cm and $A\hat{C}B = 58°$, determine BC and $A\hat{E}D$, with reasons. (4)



9 Explain why you may NOT use the reason "opp sides of a parm" inside a proof whose conclusion is that the shape is a parallelogram. (2)

10 PQRS is a quadrilateral with PQ ∥ SR and PQ = SR. Prove that PQRS is a parallelogram. (3)

TOTAL: 30 marks

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