

Section A (10 Marks)

1. Define similar triangles.
2. State the Basic Proportionality Theorem (Thales' Theorem).
3. In a triangle ABC, $DE \parallel BC$. If $AD = 3$ cm, $BD = 2$ cm, and $DE = 4$ cm, find BC.
4. In a triangle ABC, D and E are points on AB and AC respectively such that $DE \parallel BC$. If $AD = 4$ cm, $DB = 6$ cm, and $AC = 15$ cm, find AE.
5. State and prove the Pythagoras Theorem.

Section B (10 Marks)

6. In a triangle ABC, AD is the bisector of angle A. If $AB = 5$ cm, $AC = 6$ cm, and $BD = 3$ cm, find DC.
7. In a triangle ABC, D and E are points on AB and AC respectively such that $DE \parallel BC$. If $AD/DB = 2/3$ and $AC = 18$ cm, find AE.
8. In a triangle ABC, altitudes AD and BE intersect at point H. Prove that triangles AHE and BHD are similar.
9. In a triangle ABC, angle A = 90° . A perpendicular AD is drawn from A to BC. Prove that $AD^2 = BD \times DC$.
10. In a triangle ABC, angle A = 90° , $AB = 6$ cm, and $AC = 8$ cm. A perpendicular AD is drawn from A to BC. Find the length of AD.