

Applications of Heron's Formula

Chapter 10: Heron's Formula · Topic 2

Key Concept

For example, to find the area of a quadrilateral field where all four side lengths and one diagonal length are known, the diagonal splits the quadrilateral into two triangles, and Heron's formula is applied to each separately since all necessary side lengths (from the original sides and the shared diagonal) are known. This technique is particularly valuable in real-world land surveying and construction, where irregular plots of land often have known boundary lengths but no easily measurable height for standard triangle area formulas.

Quick Revision Notes

- Heron's formula can find quadrilateral areas by splitting into two triangles using a diagonal.
- Apply Heron's formula to each resulting triangle, then add the two areas together.
- This technique is used in land surveying and construction for irregular plots.
- Heron's formula is especially useful when height cannot be easily measured.

Practice Questions

- 1 Find the area of a triangle with sides 3,4,5 using Heron's formula.
- 2 A quadrilateral field has a diagonal splitting it into two triangles with known sides. Explain how you would find its total area.
- 3 Explain why Heron's formula is valuable for land surveying.