

Applying Trigonometry in Real-World Problems

Example 1

An airplane leaves a city. It begins by flying 250 km/h on a course 9° East of North. However wind changes the speed of the plane to 275 km/h and its direction to a course of 5° West of North. If the plane continues flying on this new course for 2 hours, how far off course has it gone?

Example 2

A lumberjack wants to estimate the height of a tree. He begins by measuring the angle of elevation to the top of the tree to 38° . He then walks 10m closer to the tree and measures the angle of elevation to be 49° . Find the height of the tree.

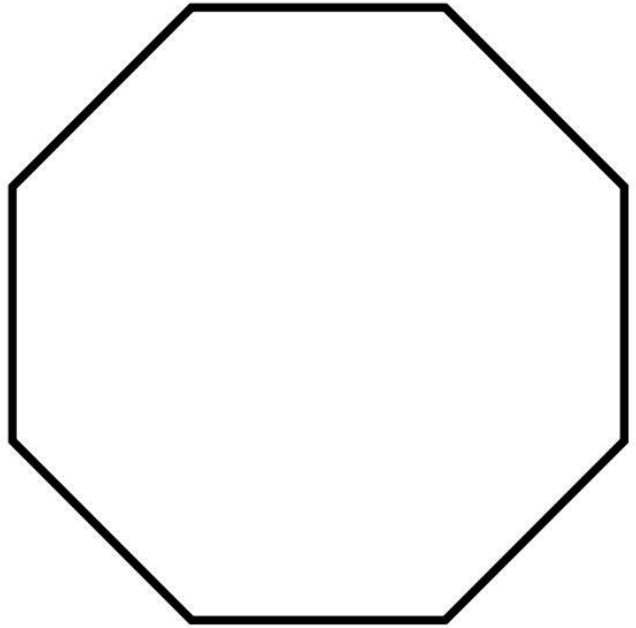
Example 3

A **regular octagon** has all side lengths equal to 15 cm. Find the length of the apothem.

NOTES:

Regular polygon – has all sides and angles equal.

Apothem – the distance from the centre of a regular polygon to one of the vertices.



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