

Year 11 · 11.3 Surveying and Navigation — Learning objectives

What students should be able to do by the end of this unit.

Prerequisites

1. I can apply angle and line rules; use right-angled trigonometry and Pythagoras' theorem, including problem-solving, converse, and 3D.
2. I can use bearings; calculate triangle area; solve 3D problems.

Non-Right-Angle Trigonometry

3. I can apply the sine rule, cosine rule, and area-of-triangle formula to solve problems.
4. I can solve problems involving the ambiguous case of the sine rule. (extension)
5. I can prove the sine rule and cosine rule. (enrichment)

Unit Circle

6. I can calculate arc length, sector area and segment area in degrees.
7. I can understand radian measure and the full unit circle. (extension)
8. I can use negative and complementary angle identities, the Pythagorean identity, and $\sin x / \cos x = \tan x$. (extension)
9. I can use special triangles to find exact trigonometric values at multiples of π . (extension)
10. I can solve trigonometric equations. (extension)
11. I can calculate arc length, sector and segment area in radians. (extension)

Trigonometric Modelling

12. I can identify periodic behaviour and model it using sine and cosine functions.
13. I can fit trigonometric models to data.
14. I can explore the tangent function. (enrichment)