Achievement Standard

Subject Reference Mathematics 1.8

Title Solve right-angled triangle problems

Level 1 **Credits** 2 **Assessment** External

Subfield Mathematics

Domain Geometry

Registration date 21 October 2003 **Date version published** 21 October 2003

This achievement standard involves the use of Pythagoras' Theorem and trigonometric ratios to solve right-angled triangle problems.

	Achievement Criteria	**Explanatory Notes**
Achievement	• Solve right-angled triangle problems.	• Students will be required to use both Pythagoras' Theorem and trigonometric ratios. The use of trigonometric ratios to find the length of the hypotenuse will not be assessed.
Achievement with Merit	• Solve problems in practical situations involving right-angled triangles.	• Problems may involve interpretation in context. • The right-angled triangle will be given or easily identified and extracted from a diagram, eg using symmetry of isosceles triangles. • Problems may involve: – trigonometry to find the hypotenuse – straight-forward 3D situations – vectors – interpretation of bearings or grid references.

	Achievement Criteria	Explanatory Notes
Achievement with Excellence	• Solve problems in word or 3D situations.	• Problems will require students to identify right-angled triangles implicit in a context, extract them from the context to solve the problem and present well-reasoned and logical solutions in context. • Problems may be presented either in words without a diagram or with a diagram of a 3D situation involving at least two triangles. • Students are expected to use appropriate rounding, units and mathematical statements.

General Explanatory Notes

1 This achievement standard is derived from *Mathematics in the New Zealand Curriculum*, Learning Media, Ministry of Education, 1992:
- achievement objectives, pp. 104, 110, 116
- suggested learning experiences, pp. 105, 111, 117
- sample assessment activities, pp. 106, 112, 118
- mathematical processes, pp. 26, 28.

2 All problems will be set in practical contexts.

Quality Assurance

1 Providers and Industry Training Organisations must be accredited by the Qualifications Authority before they can register credits from assessment against achievement standards.

2 Accredited providers and Industry Training Organisations assessing against achievement standards must engage with the moderation system that applies to those achievement standards.

Accreditation and Moderation Action Plan (AMAP) reference 0226