



Australian Government

FSKNUM036 Use trigonometry for work

Release: 1

FSKNUM036 Use trigonometry for work

Modification History

Release	Comments
Release 1	This version first released with FSK Foundation Skills Training Package Version 2.0.

Application

This unit describes the skills and knowledge to apply and use trigonometric ratios (sine, cosine and tangent), the Sine Rule and Cosine Rule and the area of triangle formula for practical workplace tasks. It includes extracting and analysing information relevant to trigonometry, undertaking trigonometry in the workplace, and communicating the mathematical information.

An individual performing these tasks works autonomously and accesses and evaluates support from a broad range of sources as needed.

This unit applies to individuals who use, or are preparing to use, numeracy skills to complete workplace activities. This includes existing workers and individuals preparing for employment through vocational education and training. This unit should be integrated and contextualised with vocational training to support achievement of vocational competency.

This unit is aligned to, but does not fully address, the Australian Core Skills Framework (ACSF) numeracy core skill indicators .09, .10 and .11 at level 5 in the workplace and employment domain of communication.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Numeracy

Elements and Performance Criteria

Element	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Extract and analyse information relevant to trigonometry	1.1 Extract highly embedded mathematical information relevant to trigonometry from a broad range of highly complex workplace texts and tasks

Element	Performance Criteria
	1.2 Incorporate information from other sources to inform and support analysis of the extracted information, where necessary 1.3 Analyse and synthesise trigonometry information required to complete workplace task
2. Apply trigonometry to complete work related calculations	2.1 Select method of solution from an expanded range of highly developed mathematical problem solving strategies and processes to complete workplace task involving triangles 2.2 Estimate outcome of trigonometric analysis related to using specialised mathematical problem solving strategies and processes to complete workplace task 2.3 Use trigonometric ratios to calculate lengths of sides and angles of right angled triangles related to practical workplace tasks 2.4 Undertake trigonometric calculations related to non-right angled triangles 2.5 Check outcomes and critically review mathematics used and real-world implications of results using developed estimation and evaluation techniques
3. Communicate results	3.1 Use formal and specialised written mathematical representation and symbolism to document, interpret and communicate mathematical thinking, problem solving process, outcomes and implications 3.2 Use specialised mathematical and general language to discuss, explain and interpret the mathematical processes, results and implications

Foundation Skills

This section describes language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

Skill	Description
Technology	Uses a scientific calculator

Mapping Information

Supersedes and is equivalent to FSKNUM36 Use trigonometry for work.

Links

Companion Volume Implementation Guide is found on VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=f572fe10-a855-4986-9295-3852c771f178>

Assessment Requirements for FSKNUM036 Use trigonometry for work

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Performance Evidence

The candidate must demonstrate the ability to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including evidence of the ability to:

- perform a broad range of multi-step mathematical problem solving processes using trigonometry to complete a workplace task, including:
 - calculating side lengths and angle sizes in right-angled triangles
 - using the Sine Rule and Cosine Rule to calculate unknown sides and angles of triangles
 - calculating the area of a triangle using relevant formula
- make estimations to check problem solving outcomes and determine appropriate accuracy required for above workplace task
- critically review above mathematical processes and outcomes obtained, and evaluate real-world implications.
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Knowledge Evidence

The candidate must be able to demonstrate knowledge to complete the tasks outlined in the elements, performance criteria and foundation skills of this unit, including knowledge of:

- application of and names and properties of different triangles in workplace contexts
- application of trigonometry in workplace contexts
- use and application of trigonometric ratios, including sine, cosine and tangent
- use and application of relevant trigonometric formulas
- purpose and use of relevant technology, such as CAS calculator, spreadsheets or other mathematical or workplace software
- developed estimation and evaluation processes
- implications of calculations and results for workplace tasks
- specialised and formal mathematical written language and symbolism relevant to workplace task.
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Assessment Conditions

Competency is to be assessed in the workplace, a workplace simulated environment or a vocational training context.

Assistive technologies can be utilised to assist with oral and written communication.

Skills must be demonstrated using highly complex texts and tasks that reflect those typically found in a workplace.

The following resources are to be made available:

- a scientific calculator or graphing software
- own familiar support resources.

Assessors must:

- satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards, and
- have sound knowledge of the ACSF and performance features of the ACSF level being assessed, and
- have demonstrable expertise, knowledge and skills in the vocational contextualisation and assessment of the core skill, numeracy, and
- have completed the following or equivalent:
 - TAESS00009 Address Foundation Skills in Vocational Practice Skill Set; or
 - a higher level education qualification, such as:
 - TAE80113 Graduate Diploma of Adult Language, Literacy and Numeracy Practice (and its equivalent TAE70111); or
 - Bachelor of Education, Graduate Certificate or Graduate Diploma of Education, or higher. This may include qualifications relating to TESOL, adult education or vocational education.

Links

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