

---

**PROBABILITY**  
**Use probability techniques to solve  
problems**

---

<b>level:</b>	<b>2</b>
<b>credit:</b>	<b>2</b>
<b>planned review date:</b>	June 2008
<b>sub-field:</b>	Statistics and Probability
<b>purpose:</b>	People credited with this unit standard are able to use simulation techniques to solve probability problems, and solve problems modelled by the normal distribution.
<b>entry information:</b>	Open.
<b>accreditation option:</b>	Evaluation of documentation by NZQA.
<b>moderation option:</b>	A centrally established and directed national moderation system has been set up by NZQA.
<b>special notes:</b>	<p>1 Learning Programme This unit standard can be used to assess outcomes of a learning programme based on achievement objectives from <i>Mathematics in the New Zealand Curriculum</i>, Ministry of Education (Wellington: Learning Media, 1992): Statistics (Exploring probability), Level 7, page 198</p> <ul style="list-style-type: none"><li>– simulate situations using dice or random number generators to calculate probabilities of outcomes;</li><li>– recognise situations where the normal distribution is a suitable mathematical model, and use this model to solve problems;</li><li>– reduce a normal distribution to standard normal form, and use tables of normal probabilities;</li></ul> <p>or from <i>Tauaki Marautanga Pāngarau</i>, Ministry of Education (Wellington: Learning Media, 1994), Tauanga, Taumata 7.</p> <p>The skills in this unit standard are some of those that could be used to collect assessment information for Unit 5243, <i>Apply mathematical processes and skills in problems</i>.</p>
	<p>2 Assessment Notes</p>

---

**PROBABILITY**  
**Use probability techniques to solve  
problems**

---

For a definition of *problem*, as used in this unit standard, refer to the New Zealand Association of Mathematics Teachers' website at [www.nzamt.org.nz/problem.htm](http://www.nzamt.org.nz/problem.htm).

For element 1, the standard must be met in problems involving simulation. Simulations could include the use of dice, random numbers, experimentation or technology and may involve more than one variable.

For element 2, the standard must be met in situations modelled by the normal distribution for any value of  $z$ , and may include two scores. Inverse normal problems are not expected.

Calculators and/or computers may be used in achievement of credit for this unit standard.

- 3 Competence in Unit 5242, *Determine probabilities* is recommended before undertaking assessment towards this unit standard.

## **Elements and Performance Criteria**

### **element 1**

Use simulation techniques to solve probability problems.

### **performance criteria**

- 1.1 Techniques chosen are appropriate to the problem.
- 1.2 Solution is consistent with the problem.

---

**PROBABILITY**  
**Use probability techniques to solve**  
**problems**

---

**element 2**

Solve problems modelled by the normal distribution.

**performance criteria**

2.1 Problem is solved using normal distribution model.

2.2 Solution is consistent with the problem.

---

**Comments on this unit standard**

Please contact the NZQA National Qualifications Services [nqs@nzqa.govt.nz](mailto:nqs@nzqa.govt.nz) if you wish to suggest changes to the content of this unit standard.

**Please Note**

Providers must be accredited by the Qualifications Authority or a delegated inter-institutional body before they can register credits from assessment against unit standards or deliver courses of study leading to that assessment.

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

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

Accreditation requirements and an outline of the moderation system that applies to this standard are outlined in the Accreditation and Moderation Action Plan (AMAP). The AMAP also includes useful information about special requirements for providers wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

This unit standard is covered by AMAP 0226 which can be accessed at <http://www.nzqa.govt.nz/site/framework/search.html>.