

Achievement Standard

Subject Reference Statistics and Modelling 3.3

Title Solve straightforward problems involving probability

Level 3 **Credits** 4 **Assessment** External

Subfield Statistics and Probability

Domain Probability

Registration date 9 November 2005 **Date version published** 9 November 2005

This achievement standard involves solving straightforward problems involving probability.

	Achievement Criteria	Explanatory Notes
Achievement	<ul style="list-style-type: none"> Solve straightforward problems involving probability. 	<ul style="list-style-type: none"> Problems will be selected from situations involving: <ul style="list-style-type: none"> mutually exclusive events independent events complementary events combined events. Problems may involve calculation of expected values or variance of random variables from a given discrete probability distribution.
Achievement with Merit	<ul style="list-style-type: none"> Solve probability problems. 	<ul style="list-style-type: none"> Problems will include some of: <ul style="list-style-type: none"> a selection from those listed for achievement conditional probability interpreting probabilities or expected values.
Achievement with Excellence	<ul style="list-style-type: none"> Apply probability theory. 	<ul style="list-style-type: none"> Applications may include: <ul style="list-style-type: none"> combinations of techniques non-numeric reasoning linear functions of independent random variables proofs.

General Explanatory Notes

- 1 This achievement standard is derived from *Mathematics in the New Zealand Curriculum*, Learning Media, Ministry of Education, 1992:
 - achievement objective pp. 164, 192, 206
 - suggested learning experiences pp. 165, 193, 207
 - sample assessment activities pp. 167, 195, 208
 - mathematical processes pp. 23–29.
 - 2 The solution of problems will involve a selection of techniques from:
 - theoretical and experimental probability
 - tree diagrams
 - Venn diagrams
 - permutations and combinations
 - tables of counts or relative frequencies.
 - 3 The use of sigma notation may be required, eg in calculations or proofs.
 - 4 The use of appropriate technology is expected.
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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