Achievement Standard

Subject Reference Mathematics 2.7

Title Solve straightforward problems involving arithmetic and geometric sequences

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

Subfield Mathematics

Domain Algebra

Registration date 20 October 2004 **Date version published** 20 October 2004

This achievement standard requires solving problems involving both arithmetic and geometric sequences.

Achievement Criteria

	Achievement Criteria	Explanatory Notes
Achievement	• Solve straightforward problems involving both arithmetic and geometric sequences.	• Assessment will be based on problems which will be selected from the following: – finding general terms of an arithmetic sequence – finding general terms of a geometric sequence – finding partial sums of an arithmetic sequence – finding partial sums of a geometric sequence – finding sum to infinity of a geometric sequence – using Σ notation. • Straightforward problems will involve recognising the type of sequence, selecting the method, and solving problems where ‘a’ and ‘d’ or ‘r’ are easily identified.
Achievement with Merit	• Solve problems involving sequences.	• Problems could require some manipulation to find ‘a’, ‘d’ or ‘r • Applications may include: – radio-active decay – % increase/decrease, such as compound interest – results of an experiment which form a sequence, eg pendulum – using log equations to find n in geometric sequences.

	Achievement Criteria	Explanatory Notes
Achievement with Excellence	• Explore situations and interpret the results of problems involving sequences.	• Situations and interpretations could include: – discussing long-term effects – comparing sequences.

General Explanatory Notes

1 This achievement standard is derived from *Mathematics in the New Zealand Curriculum*, Learning Media, Ministry of Education, 1992:
- achievement objectives p. 158
- suggested learning experiences p. 159
- sample assessment activities p. 160
- mathematical processes pp. 24, 26, 28.

2 Students will be expected to solve problems in context.

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