Achievement Standard 91258 (Mathematics and Statistics 2.3)

Apply sequences and series in solving problems

Practice assessment

Yvette has a 5 000-word project to write on New Zealand prime ministers.

1. Yvette predicts that the project will take T days, where $T = \sum_{6}^{10} (\frac{1}{2}n - 2)$. Work out her prediction.

2. Yvette starts her project on 5 March and writes 150 words that day. Each day she writes 52 more words than she did the previous day.

a. How many words will she write on 12 March?

b. How many words will Yvette have written in total by 12 March?

c. Verify that Yvette will have completed the 5 000-word project, after 12 days of writing at the same rate.

3. To encourage Yvette to stay on at school, her Aunty Jo helps out with her savings. In week 1 she gives Yvette $100, in week 2 she gives her $90, in week 3 she gives her $81, and so on. If this pattern of giving continues indefinitely, how much will Aunty Jo have given in total?

4. Amanda, who is Yvette's friend, is also working on a history project and her subject is the history of the Olympic Games. She told Yvette that every day she wrote twice as many words as she did the day before.

a. If Amanda wrote 1 024 words on the 6th day how many words did Amanda write on the 1st day?

b. How many days will it take Amanda to write a 5 000-word project?