Te Kura
Te Aho o Te Kura Pounamu
THE CORRESPONDENCE SCHOOL

MATHEMATICS AND STATISTICS MXO1013Y1

INTERNAL ASSESSMENT ACTIVITY

ACHIEVEMENT STANDARD 91026 (VERSION 3) MATHEMATICS AND STATISTICS 1.1

Apply numeric reasoning in solving problems

Level 1, Internal assessment

4 credits

STUDENT INSTRUCTIONS

Overview:

In this assessment activity, you will:

- reason with linear proportions
- perform operations with fractions, decimals, percentages, rates, ratios and powers.

Conditions:

- This is an open book assessment activity, so you may look back to any related modules or other resources.
- This must be your own work.
- There is no time limit for the completion of this activity but you should allow at least one hour.
- Any scientific, graphical, CAS calculator or computer with appropriate software may be used.
- Plagiarism detection software may be used to check this is your own work.

You will need:

- Quad or lined paper.

Supervisor requirements:

A supervisor must be present for the entire time you are working on this assessment. You must provide the full name of the supervisor and their relationship to you (e.g. parent, teacher, teacher aide, friend etc.) when you upload your assessment to the MXO1013Y1 assessment dropbox.

ASSESSMENT CRITERIA

ACHIEVEMENT STANDARD 91026 (VERSION 3) MATHEMATICS AND STATISTICS 1.1

Apply numeric reasoning in solving problems

Achieved	Achieved with Merit	Achieved with excellence
Apply numeric reasoning in solving problems.	Apply numeric reasoning, with relational thinking, in solving problems.	Apply numeric reasoning, with extended abstract thinking, in solving problems.

ASSESSMENT ACTIVITY
MATHEMATICS AND STATISTICS

INSTRUCTIONS
- Read the introduction and the information in the task carefully including Resource A.
- **Write your answers on your own paper, showing all working.**
- Write your name and Te Kura ID on each page used.
- You will need to use a calculator.
- Your supervisor (if applicable) must be present to observe you.

INTRODUCTION

QUEBEC HERE WE COME!
Iosefa, Ari and Larry are planning a trip to Canada. They will fly to Montreal from Auckland. From there they will do a road trip, visiting Quebec City, Ottawa, Toronto, and Niagara Falls. They will then drive back to Montreal and fly to Auckland.

TASK
You will investigate and calculate the amount of money each person will need to save for the trip, using the information given below. You should also consider variations in an aspect of the solution and explore the consequences of the change.

Your overall grade will be determined by the quality of your discussion and reasoning, and how well you link this to the context.

In the solution of the problem you should:
- show calculations that you have used
- use mathematical statements
- clearly explain what you are calculating at each step.

Use the following information to help you find out how much money Iosefa, Ari and Larry will **each** need to save for the trip.

- Losefa will pay 4/9 of the total cost and Ari and Larry are going to split the remaining cost between them in the ratio Ari:Larry = 3:2.
- The cost for the return flights is NZ$2,588 per person.
- Travel insurance for all three will cost NZ$622 with a discount of 2/7 off this price if purchased online.
- They estimate that they will need NZ$180 per person each day for food, accommodation and sightseeing costs.
- They decide to hire a small car for the whole trip from Canada Cars at a cost of C$15 per day plus 8% GST.
- They are probably going to take up the option of paying a flat rate for their petrol of C$1.18 per litre using the Canada Cars petrol card at every garage they use on their trip.
  Iosefa has found some petrol cost information from last year that shows petrol pricing during the months that they will be travelling. This is shown in Resource A.

- The small car they rent has a fuel consumption of 5.9 L/100 km.
- They have already decided on an itinerary for their road trip which is shown on Resource A.
- The exchange rate has varied over recent months as shown on Resource A. The current rate is 1 NZ Dollar = 0.95 Can Dollar.
- Two years ago Iosefa invested NZ$500 at a compounding interest rate of 3% per annum. The two years will be finished in time for him to use this money to pay towards his trip costs.
- Ari's whanua will pay for 0.45 of his costs.

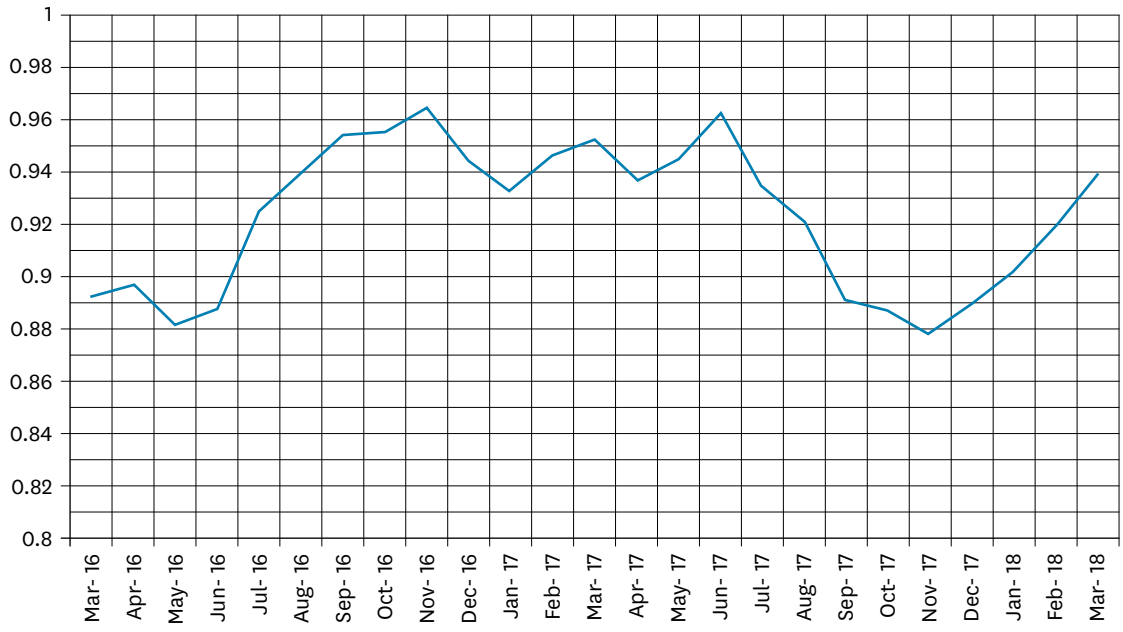
Reminder: Upload your assessment to the MXO1013Y1 assessment dropbox.

RESOURCE A

CURRENCY EXCHANGE RATE

TODAY: 1 NEW ZEALAND DOLLAR = 0.95 CANADIAN DOLLAR

Graph representing the exchange rate between $NZ and $CAN over the last year



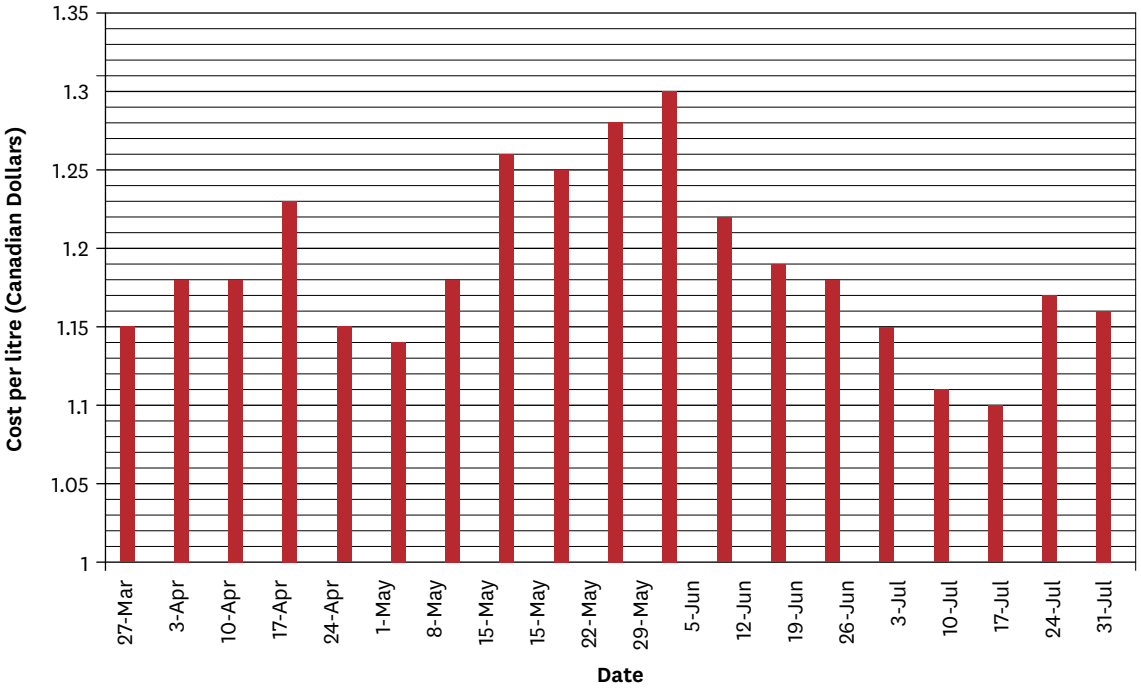
Data sourced from www.xe.com/currencyconverter/

TRAVEL ITINERARY

TRAVEL	DISTANCE (km)	TRAVEL TIME (Minutes)
Day 1: Montreal to Quebec City	255	168
Day 2: Quebec City to Ottawa	443	268
Day 3: Ottawa to Toronto	449	254
Day 4: Toronto to Niagara Falls	128	79
Day 5: Niagara Falls to Montreal	668	379

PETROL PRICES

PETROL PRICES (IN CANADIAN DOLLARS PER LITRE) FROM PREVIOUS YEAR



Data sourced from www.globalpetrolprices.com

MX01013Y1

STUDENTS – PLACE STUDENT ADDRESS LABEL BELOW OR WRITE IN YOUR DETAILS.

Full Name _____

ID No. _____

Address _____
(If changed)