

No part of the candidate's evidence in this exemplar material may be presented in an external assessment for the purpose of gaining an NZQA qualification or award.

SUPERVISOR'S USE ONLY

1

91946



Draw a cross through the box (☒) if you have NOT written in this booklet

+



Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

Level 1 Mathematics and Statistics 2025

91946 Interpret and apply mathematical and statistical information in context

Credits: Five

Achievement	Achievement with Merit	Achievement with Excellence
Interpret and apply mathematical and statistical information in context.	Interpret and apply mathematical and statistical information in context using relational thinking.	Interpret and apply mathematical and statistical information in context using extended abstract thinking.

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

You should attempt ALL the questions in this booklet.

Pull out Resource Booklet 91946R from the centre of this booklet.

Show ALL working.

If you need more room for any answer, use the extra space provided at the back of this booklet.

Check that this booklet has pages 2–12 in the correct order and that none of these pages is blank.

Do not write in the margins (▨▨▨▨). This area will be cut off when the booklet is marked.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

Achievement

TOTAL 10

QUESTION ONE

Use the information provided in Resource 1A and Resource 1B in the resource booklet to answer these questions.

- (a) Using Resource 1A, what percentage of Nike sports shoes cost more than \$500?

Looking at the graph we can see only 6 out of the 126 pairs of shoes are more than \$500. which means the ~~over~~ percentage is 4.8%

- (b) **Compare** the distributions of the cost of Adidas and Nike sports shoes shown in Resource 1A.

- Discuss similarities and differences considering **centre, shift, shape, and spread**.
- Provide numerical evidence where appropriate.
- In your answer, describe at least TWO different features, in context.
- **What conclusion about Adidas and Nike sports shoes can you make about which brand of shoe is more expensive, based on this sample?**
- Use evidence from the graph to support your answer.

We can see from the graph that ~~94%~~ 94% of all adidas shoes are under 200 dollars with most of them being under 150. We can see that Nike's shoes are more within the 250 - 200 area of price. ~~We~~ We can also see that the average cost of adidas shoes are 158, while Nike shoes are 255. Adidas also has a ~~lower~~ cheaper cheapest shoe and a cheaper most expensive shoe.

- (c) Give at least one justified reason why Resource 1A may not be reliable for comparing the cost of Adidas and Nike sports shoes.

A reason why this Resource may not be reliable is because the graph comes from a random sample from New Zealand. This could make it inaccurate because it could be from any year, prices could vary if it wasn't in New Zealand and because it states that it was adapted from www.asos.com/women this could mean these prices are for women and prices for men could vary.

Resource 1B shows the amount of spending on clothing and footwear in New Zealand between the years 2010 and 2024, in millions of New Zealand dollars.

- (d) What trends, repeating patterns, and unusual features do you notice in the spending shown in the graph?
- Support your statements with evidence from the graph.
 - Give at least two reasons to support and explain your answer.

We can see that the trend was increasing from 2010 to 2017 where it spiked from 1100 to 1400. An unusual feature was the drop in 2021, where the trend dropped ~~from~~ drastically within 3 months. This was likely due to the pandemic of Covid 19 and the world not needing to buy new clothes.

- (e) Using Resource 1B, make a prediction about future spending on clothing and footwear in New Zealand.

Explain your prediction, and discuss how confident you are in it.

I predict that the total amount spent will increase over several years. I think this will happen because after the pandemic the trend was unstable, we can also see an increase towards 2024 and as covid 19 becomes a thing of the past I'm confident in my prediction.

QUESTION TWO

Use the information provided in Resource 2A and Resource 2B in the resource booklet to answer these questions.

The graph in Resource 2A shows the relationship between the price of sports shoes and the size of the shoes.

- (a) Describe and interpret TWO different features of the relationship shown in Resource 2A.

Feature 1: The price increases with the size.

This is likely because ~~more shoes~~ there are less shoes made after size 8 so it would cost more

Feature 2: there are more shoes size 8 and below
this likely because it is a average shoe size

- (b) Adina needs to buy a new pair of size 6 sports shoes.

Using the graph in Resource 2A, what price should Adina expect to pay?

- How confident can you be in using this graph to predict shoe price?
- Support your answer with statistical reasoning.

She can expect ~~of~~ to pay around 50-70 dollars.
This is because the graph shows that the absolute majority of shoes are within that range.

- (c) Resource 2B summarises three different sports shoe companies' prices and their special offers.

Ricky wants to buy new size 7 football (soccer) sports shoes, and will choose from these companies.

Ricky wonders whether he should buy one or two pairs of sports shoes.

Which company should Ricky choose?

Make your recommendations, with reasons and considerations, using the information provided in Resource 2B, **as well as including your own personal world views.**

If Ricky is willing to collect from the factory, Fide OFF is the best option due to the second pair half price deal and ~~no~~ shipping if he collects from the factory, and it would be 120.75.

I assume that the GST is 15%

- (d) Ricky is currently wearing size 7 sports shoes, but he is growing quickly. His mother thinks that he will need larger size sports shoes next season.

Using **both** Resource 2A and Resource 2B, recommend the best option for Ricky when buying his sports shoes for next season.

Ricky should buy size 8 shoes since there are more options, since he is buying one pair he should get it from foot ball direct and if price would be 79.2 and since its $\frac{1}{3}$ off shipping he would only need to pay 51.5 dollars

QUESTION THREE

Use the information provided in Resource 3 in the resource booklet to answer these questions.

- (a) The survey was completed by 2571 people who visited the *Running Shoes Guru* website.

Approximately how many of the people who completed this survey, would be expected to run in the morning?

1362.63

- (b) According to the survey, which brand of running shoe is the most preferred?

- Discuss how confident you would be in concluding that this brand is the most popular running shoe.
- Justify your answer.

ASICS because it has the highest combined preference percentage across all km. I am confident because most people run under 65 km so it is the most popular.

Question Three continues
on the following page.

- (c) Discuss two similarities or differences in the running shoe **preference by age**.

Use this information to make suggestions of what brand of shoe you think will be bought by Quinn, who is 31 years old.

Similarity or difference 1: Nike and ~~and~~ Asics similarity
because they are the same popularity among 31
year olds

Similarity or difference 2: Since he is only 31 years old
he is also closer to the 21-30 age group
which Nike is more popular

Suggestions for Quinn: Buy ~~Nike~~ ^{Asics} if you don't run ~~more~~
more than 65 km and Nike if you do

- (d) Axel is 45 years old and runs approximately 50 km per week.
He needs to buy a new pair of running shoes.

Using any of the Resources 1–3, recommend which brand of shoe Axel should consider buying and estimate the cost of the shoes.

Include evidence from at least two sections of Resource 3 to justify your answer.

Nike because its popular and sustainable,
If Axel has an average foot size Nike has a lot of
variety.

- (e) How confident would you be using information from this survey to make recommendations about running shoes?

I would be confident because the data is
shown and they ask important questions

Extra space if required.
Write the question number(s) if applicable.

QUESTION
NUMBER

$$x + x \times 15\% = 90$$

$$2x = 600$$

~~$$x = 300$$~~

$$90 \div 2.3$$

91946

Achievement

Subject: L1 Mathematics and Statistics

Standard: 91946

Total score: 10

Q	Grade score	Marker commentary
One	A4	Demonstrates some knowledge of the key features of the displays but lacks reference to the context. Made a correct calculation using information derived from the resource.
Two	A3	Correct interpretation of the relationship between two variables. Uses the information provided in the resource to make a calculation to support the response.
Three	A3	Demonstrates an understanding of the information in the resource. Extrapolates and uses information to make a correct calculation.