

3

91584M



NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA

QUALIFY FOR THE FUTURE WORLD
KIA NOHO TAKATŪ KI TŌ ĀMUA AO!

SUPERVISOR'S USE ONLY

Te Pāngarau me te Tauanga (Tauanga), Kaupae 3, 2017

91584M Te aromātai i ngā pūrongo tauanga

9.30 i te ata Rāhina 27 Whiringa-ā-rangi 2017
Whiwhinga: Whā

Paetae	Kaiaka	Kairangi
Te aromātai i ngā pūrongo tauanga.	Te aromātai i ngā pūrongo tauanga, me ngā parahautanga.	Te aromātai i ngā pūrongo tauanga, me te āhuetanga mātau tauanga.

Tirohia mēnā e rite ana te Tau Ākonga ā-Motu (NSN) kei runga i tō puka whakauru ki te tau kei runga i tēnei whārangi.

Me whakamātau koe i ngā tūmahi KATOA kei roto i tēnei pukapuka.

Tangohia te Pukapuka Rauemi 91584MR i waenga o tēnei pukapuka.

Tuhia ō mahinga KATOA.

Tirohia mēnā kei a koe te Pukapuka Tikanga Tātai me ngā Tūtohi L3–STATMF.

Mēnā ka hiahia whārangi atu anō mō ō tuhinga, whakamahia ngā whārangi wātea kei muri o tēnei pukapuka, ka āta tohu ai i ngā tau tūmahi.

Tirohia mēnā e tika ana te raupapatanga o ngā whārangi 2–15 kei roto i tēnei pukapuka, ka mutu, kāore tētahi o aua whārangi i te takoto kau.

HOATU TE PUKAPUKA NEI KI TE KAIWHAKAHAERE HEI TE MUTUNGA O TE WHAKAMĀTAUTAU.

TAPEKE

MĀ TE KAIMĀKA ANAKE

TŪMAHI TUATAHI

Titiro ki te **Pūrongo 1** i roto i te pukapuka rauemi hei whakatutuki i ngā tūmahi e whai ake nei.

- (a) Tautohua ka whakaahua i ngā taurangi whakamārama me ngā taurangi urupare mō tēnei rangahau.

Taurangi whakamārama: _____

Taurangi urupare: _____

- (b) E kī ana te pūrongo “... i heke te kaha kōhuki o ngā kurī i muri i te whakarongotanga ki ngā puoro ōkawa”.

Whakamāramahia he aha te take i rua ai ngā ine i ngā taumata kōhuki o ngā kurī.

TŪMAHI TUARUA

Titiro ki te **Pūrongo 2** i roto i te pukapuka rauemi hei whakatutuki i ngā tūmahi e whai ake nei.

(a) E kī ana te pūrongo e 500 ngā rangatira o ngā kurī i rangahautia.

(i) Tātaihia te pae hapa mō tēnei rangahau.

(ii) Whakamāramahia mai te take me whakauru te pae hapa ki ngā pūrongo rangahau tauanga.

(b) Ko te whakapae he whakaaturanga tōtika te hunga rangatira kurī o Aotearoa i tīpakohia o ngā rangatira kurī katoa o Aotearoa i te wā o te rangahau.

E ātei ana te tuku whakapae neke atu i te haurua o ngā rangatira kurī o Aotearoa kāore i te mōhio he aha kei roto i ngā kai a ā rātou kurī?

Mā te whakamahi i tētahi ōrautanga rangahau hāngai kei te pūrongo, hangaia he āputa māia, ka whakamārama i tēnei āputa hei wāhanga o tō tuhinga.

QUESTION TWO

Refer to **Report 2** in the resource booklet to answer the following questions.

(a) The report states that 500 dog owners were surveyed.

(i) Calculate the margin of error for this survey.

(ii) Explain why the margin of error should be included in statistical survey reports.

(b) Assume that the sample of New Zealand dog owners was representative of all New Zealand dog owners at the time of the survey.

Can a claim be made that over half of New Zealand dog owners have no idea what ingredients are in the food they feed their dog?

Using a relevant survey percentage provided in the report, construct a confidence interval, and interpret this interval as part of your answer.

- (c) E kī ana te pūrongo: “I kitea anō e te rangahau K9 Natural e 40% o ngā kurī kei te pāngia e ngā mate huhua”.
- (i) Ko tētahi āhuatanga hei whakaaroaro ina arotake ana i ngā pūrongo rangahau tauanga ko wai kei te utu i te rangahau.

Whakamāramahia mai te take ka pā ai pea tētahi raruraru, nā runga i te hunga nā rātou te rangahau i utu.

- (ii) Matapakitia TĒTAHI hapa tīpako-kore mō tēnei rangahau, ā, he aha te take ka puta pea te haukume.

TŪMAHI TUATORU

Titiro ki te **Pūrongo 3** kei te pukapuka rauemi hei whakatutuki i ngā tūmahi e whai ake nei.

- (a) E kī ana te rangahau ko te pae hapa mō ngā rangahau o te tau 1992 me te 2012 he 3.6%.
 (i) Mēnā 1000 ngā tāngata o Aotearoa i rangahautia, ko te pae hapa ka pūrongohia he 3.2%.

He nui ake, iti iho rānei i te 1000 te maha o ngā tāngata o Aotearoa i rangahautia i te tau 1992?

Whakamahia te whakaaro whaitake o te tauanga hei tautoko i tō whakautu.

- (ii) Whakamāramahia mai he aha i kore ai e tika ana te whakamahi i te pae hapa i pūrongohia ki te waihanga i tētahi āputa māia whakatau tata o te 95% mō te ōrautanga o ngā tāngata o Aotearoa i te tau 1992 i tautoko kia whakapaua te pūtea ki te ikiiki tūmatanui.

- (b) E kī ana te pūrongo mō te rangahau 2012 “ko te hunga i tautoko i ngā whakapaunga whakaarotau ki te ikiiki tūmatanui i tipu ki te 48 ōrau, me te 37 ōrau e tautoko ana i ngā rori.”

E āhei ana te tuku whakapae he nui ake te ōrau o ngā tāngata o Aotearoa i te tau 2012 i tautoko kē i ngā whakapaunga ki ngā ikiiki tūmatanui i ngā whakapaunga ki ngā rori?

Waihangahia mai TĒTAHI he āputa māia, ka whakamārama i tēnei āputa i roto i tō tuhinga.

- (c) E kī ana te rārangi ūpoko mō te pūrongo “E whakaatu ana te tatauranga kua huarua te hunga e hiahia kē ana i te ikiiki tūmatanui tēnā i ngā huanui matua me ngā rori i roto i te 20 tau.”

Aromātaihia he aha ngā whakaaturanga tauanga, mēnā kei reira, i whakatakotoria i roto i te pūrongo hei tautoko i tēnei tauākī.

QUESTION THREE

Refer to **Report 3** in the resource booklet to answer the following questions.

- (a) The survey states that the margin of error for both the 1992 and 2012 surveys was 3.6%.
 (i) If 1000 New Zealanders had been surveyed, the reported margin of error would be 3.2%.

Was the number of New Zealanders surveyed in 1992 higher or lower than 1000?
 Support your answer with statistical reasoning.

- (ii) Explain why it would be inappropriate to use the reported margin of error to construct an approximate 95% confidence interval for the percentage of New Zealanders in 1992 who supported spending on public transport.

- (b) The report states that for the 2012 survey “those supporting priority spending on public transport had grown to 48 per cent, compared with 37 per cent favouring roads”.

Could a claim be made that a higher percentage of New Zealanders in 2012 supported spending on public transport than spending on roads?

Construct ONE confidence interval, and interpret this interval as part of your answer.

English translation of the wording on the front cover

Level 3 Mathematics and Statistics (Statistics), 2017

91584 Evaluate statistically based reports

9.30 a.m. Monday 27 November 2017
Credits: Four

91584M

Achievement	Achievement with Merit	Achievement with Excellence
Evaluate statistically based reports.	Evaluate statistically based reports, with justification.	Evaluate statistically based reports, with statistical insight.

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 91584R from the centre of this booklet.

Show ALL working.

Make sure that you have the Formulae and Tables Booklet L3–STATF.

If you need more room for any answer, use the space provided at the back of this booklet and clearly number the question.

Check that this booklet has pages 2–15 in the correct order and that none of these pages is blank.

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