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3

91584M



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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

Tohua tēnei pouaka mēnā
KĀORE koe i tuhituhi i roto i
tēnei pukapuka

Te Pāngarau me te Tauanga (Tauanga), Kaupae 3, 2021

91584M Te aromātai i ngā pūrongo tauanga

Ngā 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 whakaatu aroā 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 KATOAA kei roto i tēnei pukapuka.

Tangohia te Pukapuka Rauemi 91584MMR mai i te puku o tēnei pukapuka.

Tuhia ō mahinga KATOAA.

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

Ki te hiahia koe ki ētahi atu wāhi hei tuhituhi whakautu, whakamahia te wāhi wātea kei muri i te pukapuka nei.

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.

Kaua e tuhi ki roto i tētahi wāhi kauruku whakahāngai (///). Ka tapahia pea tēnei wāhi ina mākahia te pukapuka.

ME HOATU RAWA KOE I TĒNEI PUKAPUKA KI TE KAIWHAKAHAERE Ā TE MUTUNGA O TE WHAKAMĀTAUTAU.

TŪMAHI TUATAHI

Tirohia te Pūrongo 1 kei te pukapuka rauemi hei whakatutuki i ngā wāhanga tūmahi e whai ake nei.

(a) E 883 te hunga i whakautu i te Rangahau Tūhonotanga Tuawhenua 2020 a Federated Farmers.

(i) Tātaihia te pae hapa mō tēnei rangahau.

(ii) Whakamāramahia mai he aha i hiahiatia ai te pae hapa hei whakamārama i ngā whakapae ka puta i te pūrongo nei.

(b) E kī ana te pūrongo he maha ngā mema o Federated Farmers "kāore i taea te whakaoti ngā pātai tuihono i te mea kāore ā rātau ipurangi, he motumotu, he pōturi rawa rānei te tūhonotanga."

Matapakitia te pānga o tēnei ki ngā hīkaro ka puta i ngā otinga o te rangahau.

QUESTION ONE

Refer to Report 1 in the resource booklet to answer the following question parts.

(a) There were 883 respondents to the Federated Farmers Rural Connectivity Survey 2020.

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

(ii) Explain why the margin of error is needed to interpret any claims made from this survey.

(b) The report notes that several Federated Farmers members “couldn’t complete the online questions because they didn’t have internet access or connectivity was too patchy or slow.”

Discuss what impact this might have on any inferences made from the results of the survey.

- Construct and interpret a confidence interval for the proportion of New Zealand farmers who have download speeds between 0–20 Mbps.

TŪMAHI TUARUA

Tirohia te Pūrongo 2 kei te pukapuka rauemi hei whakatutuki i ngā wāhanga tūmahi e whai ake nei.

- (a) I whakamahia e te whakamātau ngā rōpū whakatina e rua – kotahi te rōpū i aromatawaitia i roto i tō rātau ake rūma (āhuatanga whakatina), ā, ko tētahi rōpū atu i aromatawaitia i te taha o tētahi mīhini karetao i tukuna anake ki a rātau ko ngā tohutohu, ā, i wahangū mō te roanga atu o te wā (āhuatanga whakatina ā-karetao).

Whakamāramahia mai te take i whakamahia ai ngā rōpū whakatina e rua.

- (b) Tautohua ngā taurangi whakamārama me ngā taurangi urupare mō tēnei whakamātau.

Taurangi whakamārama: _____

Taurangi urupare: _____

- (c) Matapakitia i pēhea pea te whakatau a ngā kairangahau he nui ake ngā āhuatanga tūpono i whāia e te rōpū akiaki – arā, he nui ake tā rātau whakakī i ā rātau poiha tēnā i te rōpū whakatina ā-karetao.

- (d) 180 ngā ākonga pia mātai hinengaro i whai wāhi ki te rangahau, i wehea matapōkeretia ki ngā rōpū e toru. I wehea ngā wāhine 154 me te wehenga o 51, 52, me te 51 ki tēnā rōpū, ki tēnā rōpū, ā, ko te wehenga o ngā tāne e 26 he 9, 8, me te 9 ki tēnā rōpū, ki tēnā rōpū.

Matapakitia te take i pēnei ai te wehe i ngā rōpū.

QUESTION TWO

Refer to Report 2 in the resource booklet to answer the following question parts.

- (a) The experiment used two control groups – one group where the participants took the test in a room on their own (control condition), and one group where the participants took the test alongside a robot that provided them only with the instructions and was silent the rest of the time (robot control condition).

Explain why two control groups were used.

- (b) Identify the explanatory and response variables for this experiment.

Explanatory variable: _____

Response variable: _____

- (c) Discuss how the researchers might have established that the treatment group took more risks – that is, they inflated their balloons significantly more frequently than the robot control group.

- (d) The study involved 180 undergraduate psychology students, split randomly across the three groups. The 154 females were split with 51, 52, and 51 in each group and the 26 males split with 9, 8, and 9 in each group.

Discuss why the researchers split the groups this way.

TŪMAHI TUATORU

Tirohia te Pūrongo 3 kei te pukapuka rauemi hei whakatutuki i ngā wāhanga tūmahi e whai ake nei.

- (a) Anei te upoko kōrero mō tēnei pūrongo: “He tino whānui te whakamahi i te reo Māori a te hunga i raro i te rima tau”.

Tautohua ngā taunakitanga kua whakatakotohia i roto i te pūrongo hei tautoko i taua upoko kōrero.

- (b) I kitea e te rangahau he matapae tōraro te wā mata o te reo Māori.

Whakamāramahia te tikanga o te matapae tōraro i tēnei horopaki.

- (c) I whakamahia ngā uiui kanohi-ki-te-kanohi mō tēnei rangahau.

Whakaahuatia kia KOTAHI te aupiki, kia KOTAHI te auheke o te whakamahi i ngā uiui kanohi-ki-te-kanohi e pā ana ki te whakaemi raraunga mō te whakamahi a ngā tamariki i te reo Māori.

Matapakitia he pēhea te pānga o te aupiki me te auheke ki ngā otinga o te rangahau.

- (d) Tērā pea ko te rangahau ‘Growing Up in New Zealand’ he tīpako tōtika o ngā tamariki katoa i Aotearoa i whānau mai i te tau 2009 me te 2010.

Ka taea te whakapae e ai ki tēnei rangahau e whai ake ana?

*He iti iho te ōwehenga o ngā tamariki o Aotearoa i whānau mai i tau 2009 me te 2010 he kōrero i ētahi kupu māmā i roto i te reo Māori i **ētahi wā**, he **auau** rānei tēnā i te **tino iti rawa**, **kore rawa** rānei.*

Waihangahia mai he āputa māia KOTAHI, ka whakamārama i taua āputa hei wāhanga o tō tuhinga.

QUESTION THREE

Refer to Report 3 in the resource booklet to answer the following question parts.

- (a) The headline for this report is: “Te reo Māori use by under-fives widespread”.

Identify the evidence that has been presented in the report to support this headline.

- (b) The study found that screen time was a negative predictor of te reo Māori.

Explain what is meant by a negative predictor in this context.

- (c) Face-to-face interviews were used for this study.

Describe ONE advantage and ONE disadvantage of using face-to-face interviews in relation to collecting data on te reo Māori use by children.

Discuss how these advantages and disadvantages could impact on the results of the survey.

- (d) Assume the ‘Growing Up in New Zealand’ longitudinal study is representative of all children in New Zealand born in 2009 and 2010.

Could the following claim be made based on this survey?

*A lower proportion of New Zealand children born in 2009 and 2010 **sometimes** or **often** speak simple words in te reo Māori than **rarely** or **never**.*

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

**He whārangi anō ki te hiahiaitia.
Tuhia te (ngā) tau tūmahi mēnā e tika ana.**

TAU TŪMAHI

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

QUESTION
NUMBER

English translation of the wording on the front cover

Level 3 Mathematics and Statistics (Statistics) 2021

91584M Evaluate statistically based reports

Credits: Four

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 91584MR from the centre of this booklet.

Show ALL working.

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

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

Do not write in any cross-hatched area (). This area may be cut off when the booklet is marked.

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

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