Mathematics Applications
YEAR 12

Investigation 1 – The Statistical Investigation Process

Semester 1 2017

Take Home Part

Time allowed: One week. Validation Test on Thursday 16 February 2016

Introduction

CensusAtSchool was a nation-wide project that collected real data from students by way of an online questionnaire. It provided a snapshot of the characteristics, attitudes and opinions of those students who completed questionnaires from 2006 to 2014. It can be located online:

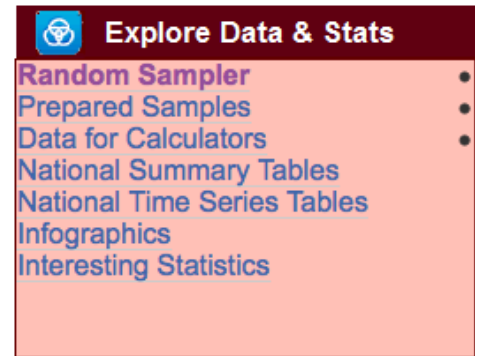http://www.abs.gov.au/websitedbs/CaSHome.nsf/Home/Home

While the database is very large, you can sample the results of the survey to allow you to answer statistical questions posed.

For example, archaeologists/forensic experts often unearth skeletons which are not complete. The proposition is that we can predict the height of a skeleton using the arm span.

Task 1   (3 marks)

(a)   Go to CensusAtSchool, using the link above, and download a random sample (using Random Sampler) with $n\sim50$ of the <u>complete list of variables </u>for the 2014 Questionnaire. This is the database you will use when completing the various tasks and questions.

(b)   State the survey questions (variables) to help you consider the proposition: <u>It is possible to use the length of an arm span of a body to estimate the height of that individual.</u>

(c)   State the explanatory variable and the response variable.

Task 2 (9 marks)

(a)   Document how you will go about selecting and presenting the data from your downloaded database.

(b)   Calculate the statistical measures you will use to decide whether the proposition is reasonable or not.

Task 3 (5 marks)

Use the statistical results from Task 2 to decide whether the proposition is reasonable or not and, if so, how you would use these measures.

Task 4 (6 marks)

Test your results from Task 2 by collecting data from your fellow students and demonstrate how you would use the second data set to support or challenge your answer in Task 3.