Sampling and variation

Learn and practise | Free preview

A sample from this topic. The complete topic collection contains three different resources and worked solutions.

Read the explanation and worked example. Show your working; use a calculator only where asked.

What you will practise

• Compare sampling methods and recognise sampling variability.

• Explain a method and check the reasonableness of a result.

Useful starting skills: Use the prerequisite operations and representations shown in the worked example.

A population is the complete group of interest; a sample is a subset. A census seeks every member. Random sampling gives members a known selection mechanism and helps reduce selection bias.

Different random samples give different summaries. Larger representative samples generally show less random variation, but a large biased sample can still mislead.

Worked example

A school samples 40 names randomly from its 800 students. Identify population and sample.

Population: all 800 students.

Sample: the 40 selected students.

Answer: 800-student population; 40-student sample

Try it yourself

Name: _____ Date: _____

1. A survey asks every household in a town. Census or sample?

2. A sports survey recruits only at a gym. Identify possible bias.

Answers and explanations

Check the method as well as the final answer. An alternative correct method is also valid.

1. Intended census

It aims to include the whole population.

2. Gym users may exercise more than the target population.

Convenience selection can overrepresent active people.

Curriculum reference: VC2M8ST01; VC2M8ST02; VC2M8ST03

Independent original resource. Not published or endorsed by VCAA. This focused set supports the listed skills; it is not a complete course or an official assessment.

This free preview may be shared intact with attribution. Not for sale.