Sampling methods and bias

6 questions | 12 marks

Equivalent correct methods earn the corresponding marks.

1. A generator selects 60 distinct IDs from 600 students. Name the method. [2 marks]

It uses chance selection from a defined list.

Answer: Simple random sampling.

2. Every 12th customer is selected after a random start from 1-12. Name it. [2 marks]

A fixed interval follows the start.

Answer: Systematic sampling.

3. Allocate a sample of 30 from 80 full-time and 120 part-time staff. [2 marks]

Multiply population fractions by 30.

Answer: 12 full-time and 18 part-time.

4. Only tutoring attendees answer about homework difficulty. Identify a risk. [2 marks]

The selection excludes non-attendees.

Answer: Tutoring attendees may have different experiences from other students.

5. A random survey has 50% non-response. Why might bias remain? [2 marks]

Random initial selection does not guarantee unbiased final responses.

Answer: Respondents may differ systematically from non-respondents.

6. Describe a cluster sample of geographically spread households. [2 marks]

Blocks are clusters; consider differences between selected and unselected blocks.

Answer: Randomly choose neighbourhood blocks and survey households within them.