Misleading claims and bias

6 questions | 14 marks

Equivalent correct methods earn the corresponding marks.

1. A website polls only its subscribers about national voting intentions. Name a risk. [2 marks]

The sampling frame is restricted.

Many voters have no opportunity to participate.

Answer: Selection bias: subscribers may not represent all voters.

2. Rewrite this leading question neutrally:'Do you agree our excellent new timetable should stay?' [2 marks]

Remove the approving adjective'excellent'.

Offer balanced response options.

Answer: For example:'Should the new timetable stay or change?'

3. Sales rose from 20 to 25. Find the absolute and percentage increase. [3 marks]

$25-20=5.$

$\frac{5}{20}\times 100=25\%.$

Answer: Increase 5; 25%.

4. A report gives a mean income but no sample size, spread or sampling method. Name two useful additions. [2 marks]

A mean alone does not establish representativeness.

Additional context supports interpretation.

Answer: For example, sample size and a spread measure/sampling method.

5. A graph uses month 1, month 2, month 10 at equal horizontal spacing. Explain the distortion. [2 marks]

The gaps are 1 month and 8 months.

The apparent rate of change is distorted.

Answer: Unequal time intervals are displayed as equal distances.

6. Why should you not delete an extreme value just to make a claim look stronger? [3 marks]

Check errors and context.

Report the rule and its effect on the conclusion.

Answer: It may be genuine evidence; exclusion needs a stated, defensible reason.