Worked answers | Statistics and data analysis

Categorical two-way tables

6 questions | 14 marks

Equivalent correct methods earn the corresponding marks.

1. Complete all totals in the table. [3 marks]

Club choices

Group	Yes	No
A	8	12
B	10	20

A: $8 + 12 = 20$; B: $10 + 20 = 30$.

Yes: $8 + 10 = 18$; No: $12 + 20 = 32$.

Answer: Row totals 20 and 30; column totals 18 and 32; grand total 50.

2. Using the table, what proportion of group A chose Yes? [2 marks]

Club choices

Group	Yes	No
A	8	12
B	10	20

Use group A's total 20.

$8 \div 20 = 0.4$.

Answer: $\frac{8}{20} = 40\%$.

3. Using the table, what percentage of Yes responses are from B? [2 marks]

Club choices

Group	Yes	No
A	8	12
B	10	20

There are 18 Yes responses.

Use $10 \div 18 \times 100$.

Answer: $\frac{10}{18} \approx 55.6\%$.

4. A has 8 Yes out of 20; B has 10 Yes out of 30. Which has the higher Yes rate? [3 marks]

Use percentages because group sizes differ.

The larger raw Yes count in B is not enough.

Answer: A:40% compared with B:33.3%.

5. A table's row totals sum to 80 but column totals sum to 78. What does this tell you? [2 marks]

Both sets of totals must count the same individuals.

Recheck cells and classifications.

Answer: At least one count or total is incorrect or missing.

6. Two groups have Yes rates 42% and 43% in small samples. Why should a claim of a large association be cautious? [2 marks]

A percentage difference alone does not describe uncertainty.

Consider sample sizes and selection.

Answer: The difference is small and may reflect sample variation.