Statistics topic test

12 questions | 24 marks | 35 minutes

Classify data, read comparative tables, describe distributions and evaluate a claim.

Equivalent correct methods earn the corresponding marks.

1. Is favourite school subject categorical or numerical data? [1 mark]

Subject names identify categories.

Answer: Categorical.

2. Is a person's height a count or a continuous measurement? [1 mark]

Height can be measured more precisely.

Answer: A continuous measurement.

3. Find the mode of 2, 4, 4, 7, 9. [1 mark]

It occurs twice, more often than the other values.

Answer: 4.

4. Find the range of 2, 4, 4, 7, 9. [1 mark]

Largest 9 minus smallest 2 gives 7.

Answer: 7.

5. Using the table, how many students are recorded in Class C? [2 marks]

Practice data: books completed in a week

Books	Class C frequency	Class D frequency
0	1	0
1	5	2
2	3	4
3	1	4

$1 + 5 + 3 + 1 = 10$.

Answer: 10.

6. Using the table, find all modes of the Class D book counts. [2 marks]

Practice data: books completed in a week

Books	Class C frequency	Class D frequency
0	1	0
1	5	2
2	3	4
3	1	4

Both values have frequency 4, the greatest frequency.

Answer: 2 and 3 books.

7. How many students in Class C and Class D together completed exactly two books? [2 marks]

Practice data: books completed in a week

Books	Class C frequency	Class D frequency
0	1	0
1	5	2
2	3	4
3	1	4

Class C has 3 and Class D has 4.

$3 + 4 = 7$.

Answer: 7 students.

8. Compare the ranges of the two classes in the table. [3 marks]

Practice data: books completed in a week

Books	Class C frequency	Class D frequency
0	1	0
1	5	2
2	3	4
3	1	4

C has observed values from 0 to 3: $3 - 0 = 3$.

D has no zero observations; its observed values run from 1 to 3: $3 - 1 = 2$.

Answer: Class C range 3; Class D range 2.

9. An article says all surveyed students chose soccer. The data is soccer 18, netball 7, other 5. Explain the error. [2 marks]

Total: $18 + 7 + 5 = 30$.

The other 12 choices contradict all.

Answer: Only 18 of the 30 surveyed students chose soccer.

10. A graph uses an axis from 40 to 50 to compare counts 45 and 48. State the numerical difference and one caution. [2 marks]

$48 - 45 = 3$.

Read the axis before judging the heights.

Answer: Difference 3. The shortened scale can exaggerate the visual difference.

11. Suggest a fair way to investigate which of two class groups uses more library books. Give a question and one consistent collection rule. [3 marks]

Define the quantity and time period.

Use the same question and counting method for both groups. Other fair plans are acceptable.

Answer: For example: How many library books did each student borrow this week? Ask everyone about the same week and count each book once.

12. Five friends report cycling times 8, 8, 9, 10, 30 minutes. Describe the data and state one limit on a conclusion. [4 marks]

Count the modes and subtract $30 - 8 = 22$.

Describe the cluster and separated value.

The small friend group does not represent every cyclist.

Answer: Mode 8; range 22; four times cluster from 8 to 10 and 30 is unusually high. Only five friends were measured.