Topic test | Statistics

Statistics - Practice test 2

Name: _____ Date: _____

16 questions | 46 marks | 55 minutes

Use different representations and missing-value questions, then evaluate an investigation.

A scientific calculator may be used.

1. Twenty names are drawn randomly from a complete roll of 200 students. What makes selection random? [2 marks]

2. A survey records favourite sport and training sessions per week. Identify the categorical variable. [2 marks]

3. The values 5,7,9 and x have mean 8. Find x. [3 marks]

4. Ten observations have mean 6 and another 20 have mean 9. Find the mean of all 30. [3 marks]

5. Use the supplied stem-and-leaf plot. Find median and range. [3 marks]

Key: $1 \mid 2$ means 1.2 kg.

Stem	Leaves
1	2 5 9
2	0 1

6. A representative sample finds 84 of 120 households recycle food scraps. Estimate the count among 1,500 households. [3 marks]

7. Why does a fair sample of 1,000 usually give a steadier estimate than a fair sample of 10? [2 marks]

8. Year-group populations are 240,180,180. Allocate a proportional sample of 60. [3 marks]

9. From the frequency table, calculate mean and median. [4 marks]

Value	Frequency
0	1
1	3
2	4
3	2

(a) Calculate the mean. [2 marks]

(b) Find the median. [2 marks]

10. A: 6,7,8,9,10. B: 4,8,8,8,12. Explain why equal means do not give the full comparison. [3 marks]

11. Rewrite fairly: Surely everyone prefers the wonderful new timetable, don't they? [2 marks]

12. A graph places times 0,1,2,10 hours at equal horizontal intervals. Explain why its slopes could mislead. [3 marks]

Time(h)	Reading
0	5
1	6
2	7
10	8

13. Choose a display for the distribution of 30 measured student heights. Explain. [2 marks]

14. A confirmed typo changes the last value in 0,1,1,2,11 to 1. Find the mean before and after correction. [3 marks]

15. A has 80 supporters out of 100; B has 45 out of 50. Which support rate is higher? [3 marks]

16. Compare the reading-time samples in the table. Find medians and ranges, then give one limitation of a conclusion. [5 marks]

A(h)	B(h)
2	1
2	3
3	3
4	4
9	4

(a) Calculate each median and range. [4 marks]

(b) State one limitation. [1 mark]