Statistics topic test

Name: _____ Date: _____

15 questions | 43 marks | 45 minutes

A progressively demanding Year 7 paper covering variables, displays, averages, comparisons and fair conclusions.

No calculator needed.

1. Classify each variable as discrete numerical, continuous numerical or categorical. [3 marks]

(a) Number of students in each club. [1 mark]

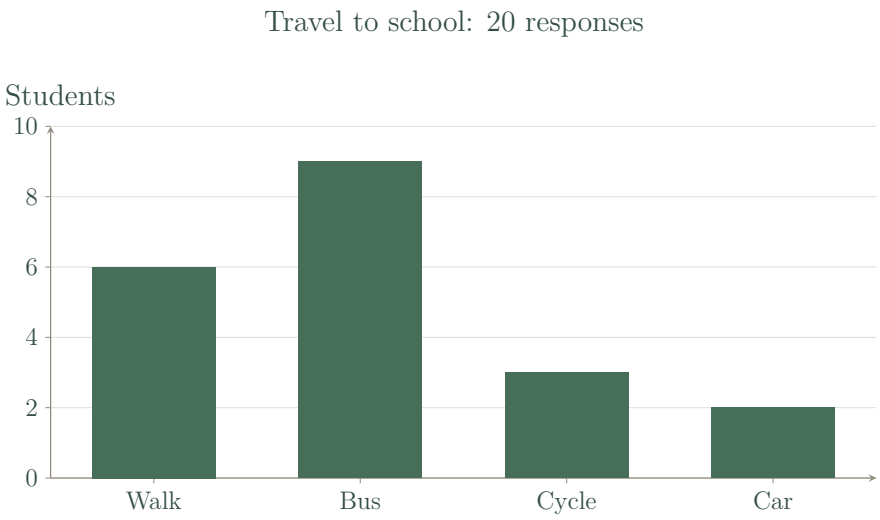
(b) Time taken to run 100 m, recorded to a whole second. [1 mark]

(c) School house name. [1 mark]

2. Write a statistical question about the number of siblings of students in your Year 7 class. [2 marks]

3. Create a frequency table for 0, 1, 1, 1, 2, 2, 3, 5. Include every observed value. [3 marks]

4. Read the travel bar graph. [3 marks]



Teaching data; frequency axis starts at zero.

(a) How many students travel by bus? [1 mark]

(b) What fraction of students walk? [2 marks]

5. Read the stem-and-leaf plot. [3 marks]

Key $2 \mid 4 = 24$ minutes

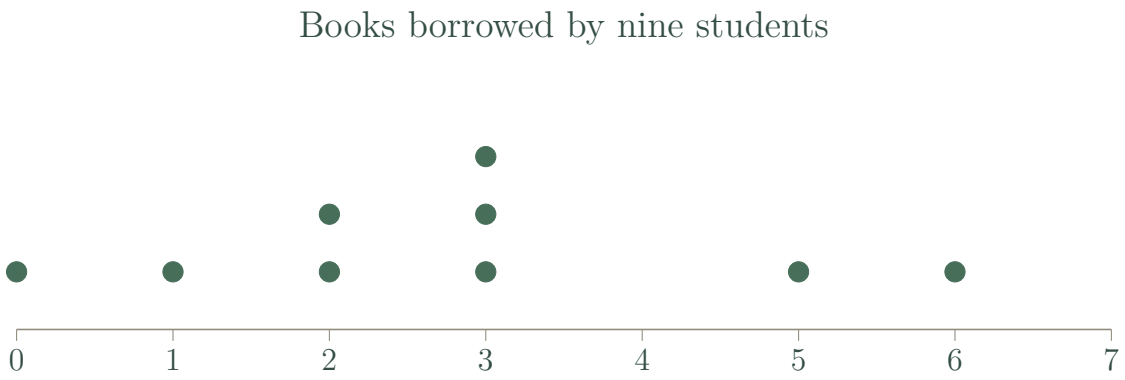
Stem	Leaves
1	8 9
2	0 2 2 4
3	1

(a) How many observations are shown? [1 mark]

(b) State the longest time. [1 mark]

(c) How many times are 22 minutes recorded? [1 mark]

6. How many students in this dot plot borrowed at most two books? [2 marks]



7. The scores are 5, 7, 7, 9, 12. [2 marks]

(a) Find the mode. [1 mark]

(b) Find the range. [1 mark]

8. Find the median of 14, 6, 8, 10, 4, 12. Show your ordering. [3 marks]

9. The distances walked in four days are 3, 5, 4 and 8 km. Find the mean daily distance. [2 marks]

10. Five numbers have a mean of 8. Four are 4, 6, 9 and 11. Find the fifth. [3 marks]

11. The waiting times are 2, 3, 3, 4 and 28 minutes. All records are correct. [5 marks]

(a) Find the mean and median. [3 marks]

(b) Choose one of those averages to describe a typical wait and explain. [2 marks]

12. Two groups have these scores: $A = 10, 11, 12, 13, 14$; $B = 6, 9, 12, 15, 18$. [4 marks]

(a) Find each group's mean. [2 marks]

(b) Find each range and compare. [2 marks]

13. Most values in a distribution are between 3 and 8, with a few extending to 30. Describe the direction of skew and explain. [2 marks]

14. A graph of category frequencies starts its vertical axis at 18, making values 20 and 22 look very different. Give a fairer display and explain. [2 marks]

15. A student asks only friends how many minutes they spent reading yesterday. Some leave the answer blank. The student enters blanks as zero and concludes that every student in the year reads for the group mean. [4 marks]

(a) Give one improvement to how participants are chosen. [1 mark]

(b) Explain how blank answers should be recorded. [1 mark]

(c) Why is the conclusion about every student unsupported? [2 marks]