Statistics and data analysis - Practice test 1

Name: _____ Date: _____

16 questions | 41 marks | 55 minutes

A progressive review of summaries, displays, paired data and fair conclusions.

A scientific calculator may be used.

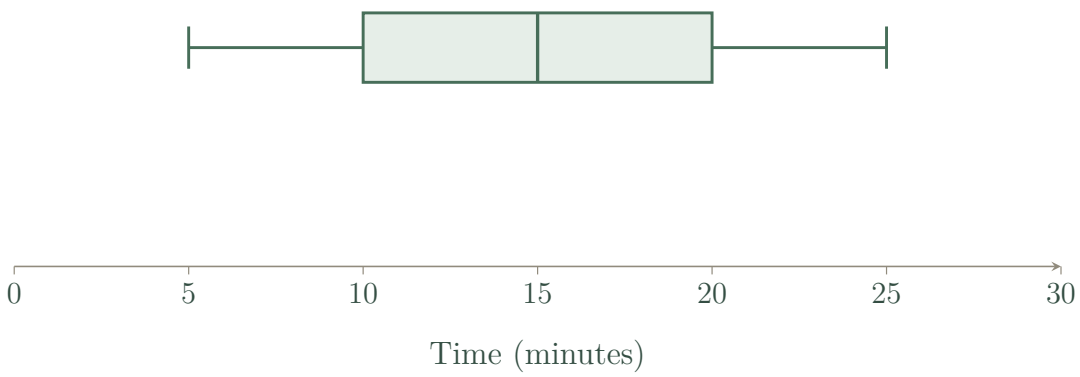
1. Find the mean of 3.4, 3.8, 4.2 and 4.6 minutes. [2 marks]

2. Find the median and range of 9.1, 8.2, 10.3, 8.8, 9.6 seconds. [3 marks]

3. Use median-of-halves to give the five-number summary of 2, 5, 6, 7, 8, 9, 12, 15. [3 marks]

4. Calculate the IQR for the five-number summary in Question 3. [2 marks]

5. Read the median, IQR and range from this plot. [3 marks]



6. Estimate the mean mass from the grouped table. [3 marks]

Masses

Mass(kg)	Frequency
$0 \leq m < 4$	2
$4 \leq m < 8$	5
$8 \leq m < 12$	3

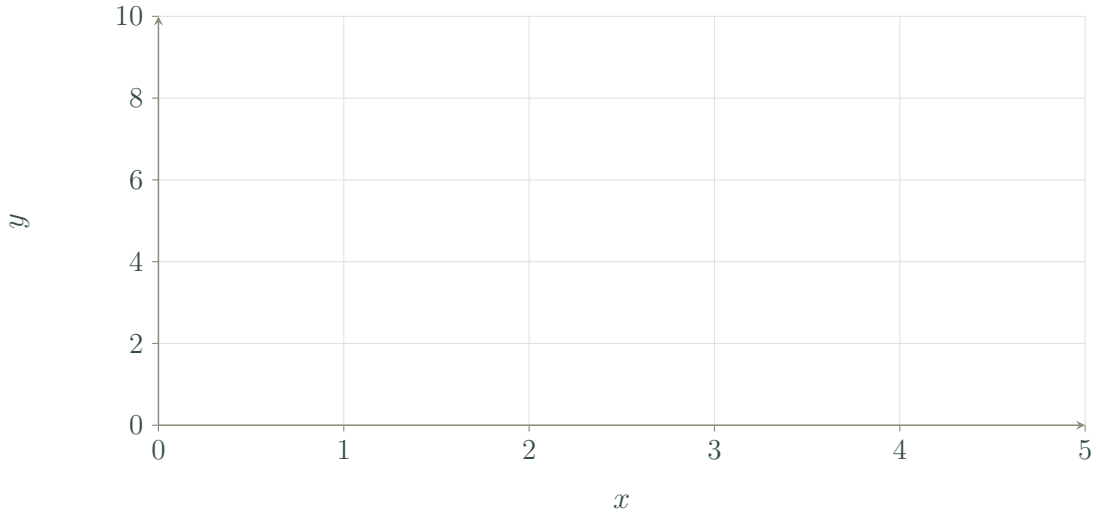
7. Find the cumulative frequencies for class counts 6, 9, 3, 2. [2 marks]

8. For ordered values 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, find P_{60} using nearest rank. [2 marks]

9. Find the population SD of 1, 1, 5, 5. [3 marks]

10. Adding 5 to every observation changes the mean and SD how? [2 marks]

11. Plot $(1, 3)$, $(2, 5)$, $(3, 6)$, $(4, 8)$. Describe the association. [3 marks]



12. Why does a strong association not establish causation? [2 marks]

13. Find the Yes rate for each group and compare. [3 marks]

Responses

Group	Yes	No
A	12	18
B	18	42

14. A bar chart compares 48 and 50 with an axis starting at 47. Explain one presentation risk. [2 marks]

15. Compare samples with medians 16 and 19 minutes and IQRs 7 and 3 minutes. [3 marks]

16. Plan one improvement to a survey of study hours/score that used only five volunteers from a tutoring club. [3 marks]