



11+ Maths: Data Handling

Original JDScience material. Not an official GL, CEM, CSSE or independent-school paper. Do not copy third-party exam questions.

Read tables and charts carefully. Show working. Give probabilities as fractions in simplest form unless asked otherwise.

Suggested time: 25 minutes · **Questions:** 14

1. The scores on a quiz are 7, 9, 8, 10, 6. Find the mean. [1]
2. Using the same scores 7, 9, 8, 10, 6, find the median, mode and range. [1]
3. A pictogram uses one symbol for 4 books. Five and a half symbols are shown for Monday. How many books were borrowed on Monday? [1]
4. A class recorded favourite sports:

Sport	Football	Netball	Swimming	Other
Pupils	12	9	7	4

How many pupils were asked in total? What fraction chose netball?

- [2]
5. On a bar chart, tennis is 8 pupils and cricket is 14. How many more chose cricket than tennis? [1]
 6. The mean of four numbers is 11. Three of the numbers are 9, 12 and 10. Find the fourth number. [1]
 7. A spinner is equally likely to land on 1, 2, 3, 4 or 5. What is the probability of an even number? [1]
 8. A bag has 3 green, 5 yellow and 2 red beads. One bead is taken at random. Probability it is not red? [1]

- 9.** A line graph of Saturday temperature starts at 8°C at 08:00, rises steadily to 16°C at 12:00, stays the same until 14:00, then falls to 11°C at 18:00.
- a) What is the temperature at 12:00?
- b) For how long is the temperature 16°C ?
- c) By how many degrees does it fall after 14:00?
- 10.** In a pie chart of 36 pupils, one slice is 90° . How many pupils does that slice represent? [3]
- 11.** These waiting times in minutes are: 4, 12, 7, 4, 9, 4, 8. Find the mode and the range. [1]
- 12.** A fair coin is flipped twice. List all possible outcomes. What is the probability of two heads? [1]
- 13.** The range of a data set is 15 and the smallest value is 8. What is the largest value? [1]
- 14.** A dual bar chart compares boys and girls choosing art. Boys: 11. Girls: 17. What is the total choosing art, and what is the difference? [1]

Answers and short explanations

Check your work only after you have finished. Equivalent wording is accepted where the meaning is the same.

1. **Answer:** 8

Why: $\text{Sum} = 40$. $40 \div 5 = 8$.

2. **Answer:** Median 8; no mode (or all unique); range 4

Why: Ordered: 6, 7, 8, 9, 10. Middle is 8. Each value appears once so there is no mode. Range $10 - 6 = 4$.

3. **Answer:** 22

Why: $5 \times 4 = 20$ and half a symbol = 2, total 22.

4. **Answer:** 32 pupils; 9/32 chose netball

Why: $12 + 9 + 7 + 4 = 32$. Netball 9 out of 32, which does not simplify.

5. **Answer:** 6

Why: $14 - 8 = 6$.

6. **Answer:** 13

Why: Four numbers sum to 44. $9 + 12 + 10 = 31$. Fourth = 13.

7. **Answer:** 2/5

Why: Even numbers: 2 and 4. Two out of five equally likely outcomes.

8. **Answer:** 4/5

Why: Not red = 8 out of 10 = 4/5.

9. **Answer:** a) 16°C b) 2 hours c) 5°C

Why: The graph is described: peak 16°C from 12:00 to 14:00 (2 hours). Fall from 16 to 11 is 5°C.

10. **Answer:** 9

Why: 90° is $90/360 = 1/4$ of the class. $36 \div 4 = 9$.

11. **Answer:** Mode 4; range 8

Why: 4 appears three times. Range $12 - 4 = 8$.

12. **Answer:** HH, HT, TH, TT; $P(\text{two heads}) = 1/4$

Why: Four equally likely outcomes. Only HH is two heads.

13. **Answer:** 23

Why: Largest = smallest + range = $8 + 15 = 23$.

14. **Answer:** Total 28; difference 6

Why: $11 + 17 = 28$. $17 - 11 = 6$.