4.1 Data types, tables and charts

Name: _____ Class: _____ Date: _____ **Total: 15 marks**

KEY WORDS qualitative • two-way table

Data types, tables and charts

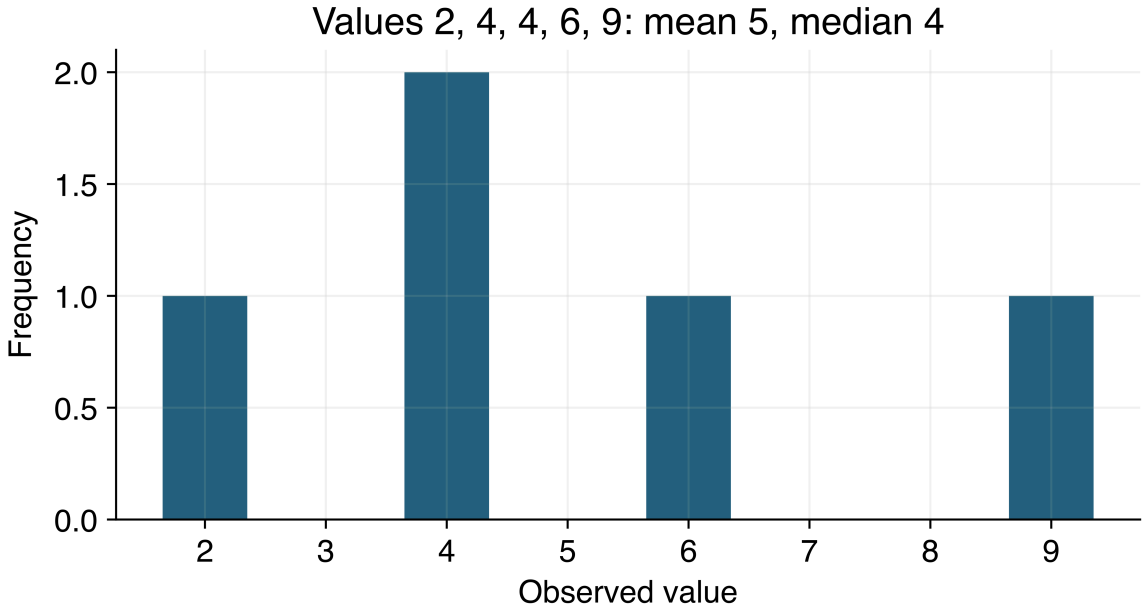
Objective

Classify data, extract from tables, build two-way tables and choose the right chart from the Core bank (rows S1–S4 Core).

1 Key knowledge and worked examples

Data types. Qualitative categorises (fruit), discrete counts (goals), continuous measures (height) – grouped or ungrouped. Extract from tables by reading row and column headers first, quoting units.

Two-way tables. Cross-tabulate two variables; cells must sum to their row and column totals: 30 students, 18 cricket, 15 tennis, 7 both fills a 2×2 with cells 11, 7, 8, 4 summing to 30. Chart choice: bars for categories, dual bars for comparisons, pie for parts-of-a-whole, lines for trends, scatter for correlation.



Original native-lesson illustration; labels belong to its worked example.

2 Practice

2.1 Classify: number of pets per household; favourite colour; mass of luggage. [3]

2.2 A two-way table shows 25 students: 14 play football, 11 basketball, 5 both. Fill the four cells and find how many play neither. [3]

2.3 Name the best chart for showing each: parts of a daily schedule; the trend of temperature over a week; comparing two classes' favourite subjects. [3]

3 Exam-style questions

3.1 *(Original.)* The two-way table below shows 40 shoppers by gender and purchase.

	Bought	**Did not buy**	**Total**
Male	12	a	20
Female	b	7	c
Total	25	d	40

(a) Find a, b, c and d. (b) A shopper is chosen at random: find the probability they are female AND bought. [4]

3.2 *(Original.)* From a printed train timetable extract: the departure time of the 3rd train on weekdays, and how many minutes the 2nd train takes versus the 4th (state your reads). *(If the table is unavailable, describe exactly which cells you would read.)* [2]

Solutions

2.1 Discrete; qualitative; continuous.

2.2 Football only 9, both 5, basketball only 6, neither 5.

2.3 Pie chart; line graph; dual bar chart.

3.1 (a) $a = 20 - 12 = 8$; $d = 40 - 25 = 15$; $b = 25 - 12 = 13$; $c = 8 + 7 = 15$ (check: $13 + 7 = 20$? No: $c = b + 7 = 20$; and $c = 40 - 20 = 20$ ✓ with $b = 13$). (b) $\frac{13}{40}$.

3.2 Read the weekday column, 3rd row for the departure; the 2nd and 4th rows' arrival minus departure cells for the durations; state both reads with units.

Local review guidance: row/column totals used to fill cells; cells consistent BOTH ways; chart choices justified by data type. This is authored classroom guidance.