

Exercise walk-through

Statistical charts and diagrams ■ E9.4

eXercise

You must be able to

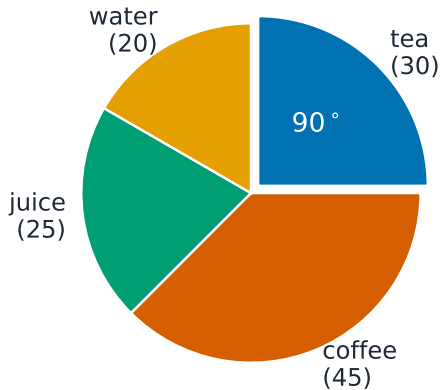
- find the angle of a pie-chart slice
- describe the correlation shown by a scatter diagram
- use a line of best fit to predict

Method — Pie charts and scatter diagrams

- **Pie chart:** slice angle = $\frac{\text{frequency}}{\text{total}} \times 360^\circ$. Tea 30 of 120 $\rightarrow \frac{30}{120} \times 360 = 90^\circ$.
- **Correlation 相关性:** **positive** (rise together), **negative** (one rises as the other falls), **zero** (no link).
- **Line of best fit 最佳拟合线:** one straight line through the middle of the points — use it to predict.

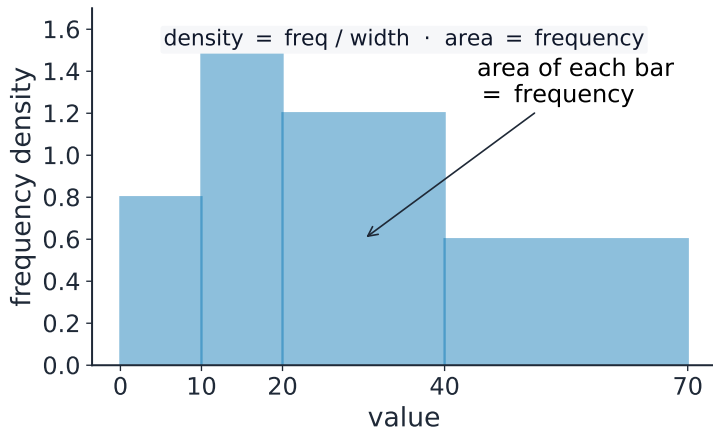
Answer shapes: **M1** a correct method, **A1** the correct answer.

Method — Pie charts and scatter diagrams



Each slice is its fraction of 360°

Method — Pie charts and scatter diagrams



A histogram is another statistical chart

Practice 2.1 ■ 2 marks

Out of 90 people, 30 chose coffee. Find the angle of the coffee slice on a pie chart.

Solution 2.1

Method: Pie charts and scatter diagrams

Worked steps

$$\frac{30}{90} \times 360^\circ = 120^\circ \quad \text{M1} \quad \text{A1} \quad \text{for the fraction} \times 360; \text{ for } 120^\circ.$$

Practice 2.2 ■ 1 mark

A scatter diagram shows that as temperature rises, ice-cream sales rise. State the type of correlation.

Solution 2.2

Method: Pie charts and scatter diagrams

Worked steps

positive correlation **B1**.

Practice 2.3 ■ 1 mark

State what a **line of best fit** is used for.

Solution 2.3

Method: Pie charts and scatter diagrams

Worked steps

to predict a value (read one variable from the other) **B1**.

Exam-style 3.1 ■ 2 marks

In a survey of 72 people, 18 walk to work. Find the angle of the “walk” slice on a pie chart.

Solution 3.1

Method: Pie charts and scatter diagrams

Worked steps

$$\frac{18}{72} \times 360^\circ = 90^\circ \quad \text{M1} \quad \text{A1} \quad \text{for } \frac{18}{72} \times 360; \text{ for } 90^\circ.$$

Exam-style 3.2 ■ 3 marks

A pie chart slice for “bus” has an angle of 120° . The total number of people is 90.
Find how many travel by bus.

Solution 3.2

Method: Pie charts and scatter diagrams

Worked steps

$$\frac{120}{360} \times 90 = \frac{1}{3} \times 90 = 30 \text{ people} \quad \text{M1} \quad \text{M1} \quad \text{A1} \quad \text{for } \frac{120}{360}; \text{ for } \times 90; \text{ for } 30.$$