

E9.4 Statistical charts and diagrams

Name: _____ Class: _____ Date: _____

Total: 9 marks

KEY WORDS correlation 相关性 • line of best fit 最佳拟合线 • pie chart 饼图 • scatter diagrams 散点图
• statistical charts and diagrams 统计图表

Objective

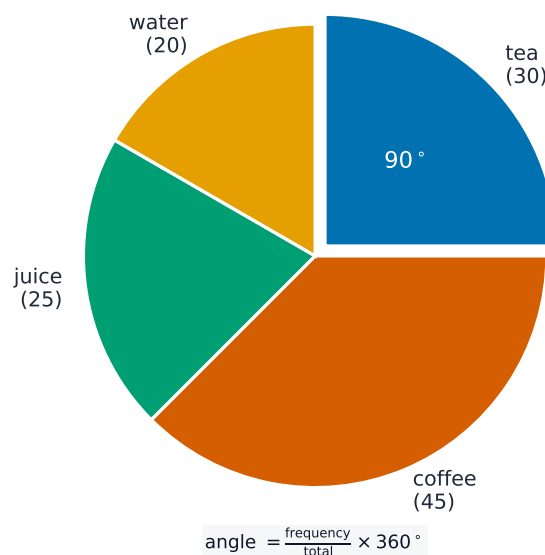
Build the skills to answer Extended exam questions on **statistical charts and diagrams** 统计图表 — the **pie chart** 饼图, and **scatter diagrams** 散点图 with **correlation** 相关性.

You must be able to:

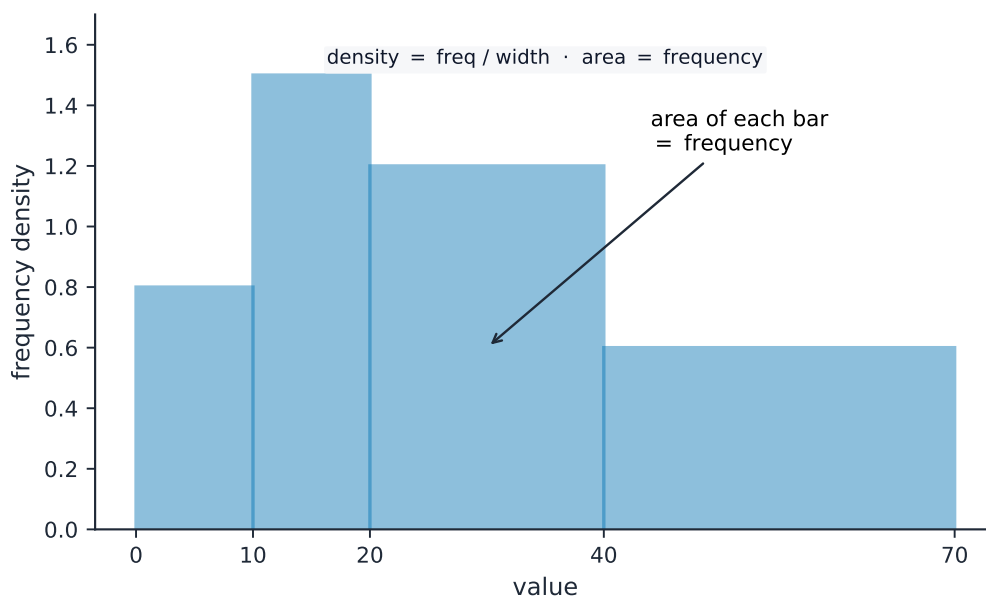
- find the angle of a pie-chart slice
- describe the correlation shown by a scatter diagram
- use a line of best fit to predict

1 Worked examples

■ Pie charts and scatter diagrams



A pie chart splits 360°; a scatter diagram shows a link



A histogram is another statistical chart

- **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.

2 Practice

2.1 Out of 90 people, 30 chose coffee. Find the angle of the coffee slice on a pie chart.[2]

2.2 A scatter diagram shows that as temperature rises, ice-cream sales rise. State the type of correlation. [1]

2.3 State what a **line of best fit** is used for. [1]

3 Exam-style questions

3.1 In a survey of 72 people, 18 walk to work. Find the angle of the "walk" slice on a pie chart. [2]

3.2 A pie chart slice for "bus" has an angle of 120° . The total number of people is 90. Find how many travel by bus. [3]

Solutions

Marking: **M1** a correct method, **A1** the correct answer.

2.1 $\frac{30}{90} \times 360^\circ = 120^\circ$.

2.2 positive correlation.

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

3.1 $\frac{18}{72} \times 360^\circ = 90^\circ$.

3.2 $\frac{120}{360} \times 90 = \frac{1}{3} \times 90 = 30$ people.