

2.4 Representing the Relationship Between Two Quantitative Variables

Name: _____ Class: _____ Date: _____ Total: 9 marks

KEY WORDS scatterplot 散点图 • form 形态 • direction 方向 • strength 强度

Objective

Build the skills to answer exam questions on **the relationship between two quantitative variables**.

You must be able to:

- display two quantitative variables with a **scatterplot** 散点图
- describe the **direction** 方向, **form** 形态, and **strength** 强度 of the pattern
- identify **outliers** or departures from the pattern

1 Worked examples

Study these first. Each one shows the method for a question type used later.

■ Scatterplots

A **scatterplot** plots two quantitative variables, one on each axis.

■ Direction, form, strength

- Direction** — positive (both rise) or negative (one rises as the other falls).
- Form** — linear or curved.
- Strength** — how tightly the points cluster around the pattern.

Note any **outliers** or points that depart from the overall pattern.

2 Practice

2.1 State what a scatterplot displays. [1]

2.2 Name the three things to describe about a scatterplot’s pattern. [2]

2.3 State what a “negative direction” means. [1]

3 Exam-style questions

3.1 A scatterplot displays [1]

- | | |
|---|---|
| A | B |
| C | D |
- A one categorical variable
B two quantitative variables
C a boxplot
D a mean

3.2 As one variable rises and the other falls, the direction is [1]

- | | |
|---|---|
| A | B |
| C | D |
- A positive
B negative
C zero
D curved

3.3 A scatterplot of height versus weight rises to the right in a tight straight-line pattern.

- (a) State the direction. [1]
(b) State the form. [1]
(c) State the strength. [1]