Exercise walk-through

Representing the Relationship Between Two Quantitative Variables ▪ 2.4

eXercise

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

Method — Scatterplots

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

Method — 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.

Practice 2.1 ▪ 1 mark

State what a scatterplot displays.

Solution 2.1

Worked steps

two quantitative variables, one on each axis B1.

Practice 2.2 ▪ 2 marks

Name the three things to describe about a scatterplot's pattern.

Solution 2.2

Worked steps

direction, form, strength B1 B1 *for any two; for all three.*

Practice 2.3 ▪ 1 mark

State what a “negative direction” means.

Solution 2.3

Method: Direction, form, strength

Worked steps

as one variable increases, the other tends to decrease B1.

Exam-style 3.1 ▪ 1 mark

A scatterplot displays

A one categorical variable

B two quantitative variables

C a boxplot

D a mean

Solution 3.1

A one categorical variable

B two quantitative variables ✓

C a boxplot

D a mean

Worked steps

B.

Exam-style 3.2 ▪ 1 mark

As one variable rises and the other falls, the direction is

A positive

B negative

C zero

D curved

Solution 3.2

Method: Direction, form, strength

A positive

B negative ✓

C zero

D curved

Worked steps

B.

Exam-style 3.3 ▪ 1 mark

A scatterplot of height versus weight rises to the right in a tight straight-line pattern.
(a) State the direction.
(b) State the form.
(c) State the strength.

Solution 3.3

Method: Direction, form, strength

Worked steps

(a) positive B1. (b) linear B1. (c) strong B1.