

1.4 Representing a Categorical Variable with Graphs

Name: _____ Class: _____ Date: _____ **Total: 8 marks**

KEY WORDS bar chart 条形图 • pie chart 饼图 • segmented bar chart 分段条形图
• variable 变量 • categorical 分类

Objective

Build the skills to answer exam questions on **representing a categorical variable with graphs**.

You must be able to:

- display a categorical variable with a **bar chart** 条形图
- use a **pie chart** 饼图 to show each category’s share of the whole
- represent two categorical variables with a **side-by-side** or **segmented bar chart** 分段条形图

1 Worked examples

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

■ **Bar chart and pie chart**

A **bar chart** shows the distribution of a categorical variable using the frequency or relative frequency of each category. A **pie chart** shows each category as a **share of the whole**.

■ **Two categorical variables**

A **side-by-side** or **segmented (stacked) bar chart** compares two categorical variables — for example, drink choice broken down by age group.

2 Practice

2.1 Name a graph for a single categorical variable. [1]

2.2 State what a pie chart shows. [1]

2.3 Name a graph for displaying two categorical variables. [1]

3 Exam-style questions

3.1 A bar chart displays [1]

- | | |
|---|---|
| A | B |
| C | D |
- A** the shape of a quantitative variable
B the distribution of a categorical variable
C a scatterplot
D a z-score

3.2 A pie chart shows each category as [1]

- | | |
|---|---|
| A | B |
| C | D |
- A** a count only
B a share of the whole
C a mean
D an outlier

3.3 A café records customers’ drink choices.

- (a) Name a suitable graph for this one variable. [1]
- (b) State what a pie chart of the data would show. [1]
- (c) Name a graph that compares drink choice by age group. [1]