

# 1.4 Representing a Categorical Variable with Graphs

---

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

Total: 8 marks

## 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** 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** 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]

### 4 Go further

---

- work through the **1.4 Representing a Categorical Variable with Graphs** lesson on the **Learn** page;
- read the **Exploring One-Variable Data** section of the AP Statistics handout on the **Know** page.

## Solutions

---

**2.1** a bar chart.

**2.2** each category as a share (proportion) of the whole.

**2.3** a side-by-side or segmented (stacked) bar chart.

**3.1 B.**

**3.2 B.**

**3.3** (a) a bar chart. (b) each drink as a share of the whole. (c) a segmented or side-by-side bar chart.