

# Exercise walk-through

## Age Structure Diagrams ■ 3.6

eXercise

## You must be able to

- read an **age structure diagram** 年龄结构图 (population pyramid)
- predict future growth from its shape
- link a wide base to rapid growth

## Method — What the diagram shows

An **age structure diagram** shows the number of people in each age group by sex, stacked youngest at the bottom. Its **shape** predicts future growth.

## Method — Shapes and growth

- **Wide base** (many young) → **rapid growth** (many future parents).
- **Even/straight sides** → **stable** population.
- **Narrow base** (few young) → **declining** population.

## Method — Reading momentum

A wide base gives **population momentum**: even if fertility drops, the large young group will still have children, so growth continues for a while.

## Method — A worked prediction

A pyramid with a very wide base and narrow top predicts a **fast-growing** population, typical of a developing country.

## Practice 2.1 ■ 1 mark

What does a wide base on an age structure diagram indicate?

## Solution 2.1

### Worked steps

Rapid future growth (many young people) **B1**.

## Practice 2.2 ■ 1 mark

What shape indicates a stable population?

## Solution 2.2

Method: Shapes and growth

### Worked steps

Straight/even sides (a column shape) **B1**.

## Practice 2.3 ■ 1 mark

What does a narrow base indicate?

## Solution 2.3

### Worked steps

A declining population **B1**.

## Exam-style 3.1 ■ 1 mark

A population pyramid with a very wide base is likely to

- A** decline rapidly
- B** grow rapidly
- C** stay perfectly stable
- D** have no children

## Solution 3.1

Method: A worked prediction

**A** decline rapidly

**B** grow rapidly



**C** stay perfectly stable

**D** have no children

### Worked steps

**B** — grow rapidly.

## Exam-style 3.2 ■ 1 mark

A country's age structure diagram has a wide base and narrows sharply toward the top.

- (a) Predict its future population trend.
- (b) Explain your prediction.

## Solution 3.2

Method: A worked prediction

### Worked steps

(a) Rapid growth **B1**. (b) The wide base means many young people who will become parents, so births will stay high for years **M1 A1**.

## Exam-style 3.3 ■ 2 marks

Explain what population momentum means and why a wide-based pyramid causes it.

## Solution 3.3

### Worked steps

Population momentum is continued growth even after fertility falls, because the large group of young people already born will still reach reproductive age and have children **M1** **A1**.