

Exercise walk-through

Lists ■ 3.10

eXercise

You must be able to

- explain how a **list** 列表 stores an ordered collection of **elements** 元素
- access or modify an element using its **index** 索引 position
- use **iteration** to traverse a list
- apply list operations such as **append** 追加, insert, and remove

Method — List and index

A **list** stores an ordered collection of values under one name. Each element has an **index** (position); here the first element is at index 1.

Method — Operations

append (add to the end), **insert** (add at a position), **remove** (delete an element).

Method — Traversing

Use **iteration** to visit and process every element. For `scores = [8, 5, 9]`, `scores[1]` is 5 and `scores[2]` is 9.

Practice 2.1 ■ 1 mark

Define a list.

Solution 2.1

Worked steps

an ordered collection of values (elements) stored under one name **B1**.

Practice 2.2 ■ 1 mark

For the list $[4, 7, 2, 9]$, state the element at index 2.

Solution 2.2

Method: List and index

Worked steps

7 **B1**.

Practice 2.3 ■ 1 mark

Name one operation that changes a list's contents.

Solution 2.3

Method: List and index

Worked steps

any one of: append, insert, remove **B1**.

Exam-style 3.1 ■ 1 mark

A list stores

- A** one value only
- B** an ordered collection of values
- C** only text
- D** a single Boolean

Solution 3.1

Method: List and index

- A one value only
- B an ordered collection of values 
- C only text
- D a single Boolean

Worked steps

B.

Exam-style 3.2 ■ 1 mark

To process every element of a list, you use

A a filter only

B iteration

C a substring

D compression

Solution 3.2

Method: Traversing

A a filter only

B iteration 

C a substring

D compression

Worked steps

B.

Exam-style 3.3 ■ 1 mark

A list `names = ["Ana", "Ben", "Cara"]` (index 1 is first).

- (a) State `names[1]`.
- (b) State the length of the list.
- (c) Name the operation that adds "Dan" to the end.

Solution 3.3

Method: List and index

Worked steps

(a) "Ana" **B1**. (b) 3 **B1**. (c) append **B1**.