

Exercise walk-through

Array Creation and Access ■ 4.3

eXercise

You must be able to

- declare and create an **array** 数组 to store a fixed number of same-type values
- use an **index** 索引 to access an element, starting from 0
- find the number of elements with the `length` field

Method — Creating and accessing an array

```
k+ktinto[o]+w na+w o+=w knew+w k+ktinto[l+m+mi5o]p;+w    c+c1// 5 ints, ind
k+ktinto[o]+w nnums+w o+=w pl+m+mi10p,+w l+m+mi20p,+w l+m+mi30p,+w l+m+mi4
```

Access an element by **index** (from 0): `nums[0]` is 10, and the last is `nums[nums.length - 1]`.

Method — Length

`nums.length` gives the number of elements (here 4). Note it is a **field**, not a method — no parentheses.

Practice 2.1 ■ 1 mark

State the first index of an array.

Solution 2.1

Method: Creating and accessing an array

Worked steps

0 **B1**.

Practice 2.2 ■ 1 mark

For `int[] a = new int[6];`, state `a.length`.

Solution 2.2

Worked steps

6 **B1**.

Practice 2.3 ■ 1 mark

State how to access the third element of array `a`.

Solution 2.3

Method: Creating and accessing an array

Worked steps

`a[2]` (index 2 is the third element) **B1**.

Exam-style 3.1 ■ 1 mark

Array indices start at

A 1

B 0

C -1

D length

Solution 3.1

Method: Creating and accessing an array

A 1

B 0



C -1

D length

Worked steps

B.

Exam-style 3.2 ■ 1 mark

The number of elements in array `a` is

A `a.size()`

B `a.length`

C `a.count`

D `length(a)`

Solution 3.2

Method: Length

A `a.size()`

B `a.length`



C `a.count`

D `length(a)`

Worked steps

B.

Exam-style 3.3 ■ 1 mark

```
int[] nums = {10, 20, 30, 40};
```

- (a) State `nums[0]`.
- (b) State `nums.length`.
- (c) State the last valid index.

Solution 3.3

Method: Creating and accessing an array

Worked steps

(a) 10 **B1**. (b) 4 **B1**. (c) 3 **B1**.