

4.3 Array Creation and Access

Name: _____ Class: _____ Date: _____

Total: 8 marks

Objective

Build the skills to answer exam questions on **array creation and access**.

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

1 Worked examples

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

■ Creating and accessing an array

```
int[] a = new int[5];    // 5 ints, indices 0..4
int[] nums = {10, 20, 30, 40};
```

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

■ Length

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

2 Practice

2.1 State the first index of an array. [1]

2.2 For `int[] a = new int[6];`, state `a.length`. [1]

2.3 State how to access the third element of array `a`. [1]

3 Exam-style questions

3.1 Array indices start at [1]

- A 1
 - B 0
 - C -1
 - D length
-

3.2 The number of elements in array `a` is [1]

- A `a.size()`
 - B `a.length`
 - C `a.count`
 - D `length(a)`
-

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

(a) State `nums[0]`. [1]

(b) State `nums.length`. [1]

(c) State the last valid index. [1]

4 Go further

- work through the **4.3 Array Creation and Access** lesson on the **Learn** page;
- read the **Array** section of the AP Computer Science A handout on the **Know** page.

Solutions

2.1 0.

2.2 6.

2.3 a[2] (index 2 is the third element).

3.1 B.

3.2 B.

3.3 (a) 10. (b) 4. (c) 3.