

1.15 String Manipulation

Name: _____ Class: _____ Date: _____

Total: 8 marks

Objective

Build the skills to answer exam questions on **String manipulation**.

You must be able to:

- create **String** 字符串 objects and combine them with **concatenation** 拼接 (+)
- call methods such as `length`, `substring`, and `indexOf`
- understand that a String is **immutable** 不可变
- compare strings with `equals` and `compareTo`, not `==`

1 Worked examples

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

■ Strings and methods

Strings are made from literals and joined with `+`. They are **zero-indexed** (the first character is at index 0) and **immutable** (methods return **new** strings):

- `"hello".length()` is 5
- `"hello".substring(1, 3)` is `"el"` (indices 1 and 2)
- `"hello".indexOf("l")` is 2

■ Comparing strings

Use `s.equals(t)` for equality and `s.compareTo(t)` for order —**not** `==`, which compares references.

2 Practice

2.1 State the result of `"cat" + "fish"`.

[1]

2.2 State the value of `"data".length()`.

[1]

2.3 State why you should compare strings with `equals`, not `==`. [1]

3 Exam-style questions

3.1 Strings in Java are [1]

- **A** mutable
 - **B** immutable
 - **C** numbers
 - **D** booleans
-

3.2 The first character of a String is at index [1]

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

3.3 String `s = "computer";`.

(a) State the value of `s.length()`. [1]

(b) State the value of `s.substring(0, 3)`. [1]

(c) State the correct way to test whether `s` equals `"computer"`. [1]

4 Go further

- work through the **1.15 String Manipulation** lesson on the **Learn** page;
- read the **Using Objects** section of the AP Computer Science A handout on the **Know** page.

Solutions

2.1 `"catfish".`

2.2 `4.`

2.3 `==` compares references (identity), while `equals` compares the actual characters.

3.1 `B.`

3.2 `B.`

3.3 (a) `8.` (b) `"com".` (c) `s.equals("computer").`