

3.5 Methods: How to Write Them

Name: _____ Class: _____ Date: _____

Total: 8 marks

KEY WORDS accessor 访问器 • mutator 修改器 • return type 返回类型 • constructor 构造函数

Objective

Build the skills to answer exam questions on **writing methods**.

You must be able to:

- write an **accessor** 访问器 (getter) that returns an instance variable
- write a **mutator** 修改器 (setter) that changes an instance variable
- give a method a **return type** 返回类型 and use **return**

1 Worked examples

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

■ Accessor and mutator

- An **accessor** (getter) **returns** the value of an instance variable.
- A **mutator** (setter) **changes** it.

```
public int getAge()      { return age; }    // accessor
public void setAge(int a) { age = a; }      // mutator
```

■ Return type

Every method states a **return type**; **return** sends back a result. A **void** method returns nothing.

2 Practice

2.1 State what an accessor method does. [1]

2.2 State what a mutator method does. [1]

2.3 State what the keyword `return` does. [1]

3 Exam-style questions

3.1 A getter (accessor) method [1]

- **A** changes a variable
 - **B** returns a variable's value
 - **C** prints output
 - **D** deletes a variable
-

3.2 A method that changes an instance variable is a [1]

- **A** getter
 - **B** setter (mutator)
 - **C** constructor
 - **D** void loop
-

3.3 `public int getScore() { return score; }.`

(a) Name this kind of method. [1]

(b) State its return type. [1]

(c) State what a matching setter would do. [1]

Solutions

2.1 it returns the value of an instance variable.

2.2 it changes the value of an instance variable.

2.3 it sends a result back to the caller.

3.1 B.

3.2 B.

3.3 (a) an accessor (getter). (b) `int`. (c) change (set) the score.