AP COMPUTER SCIENCE A • EXERCISE SHEET

1.4 Assignment Statements and Input

Name: _____ Class: _____ Date: _____ **Total: 9 marks**

Objective

Build the skills to answer exam questions on **assignment statements and input**.

You must be able to:

- use the **assignment operator** 赋值运算符 `=` to store an expression's value
- understand that assignment **replaces** the old value of a variable
- trace how a variable's value changes across assignments
- read user **input** 输入 with a `Scanner`

1 Worked examples

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

Assignment

`variable = expression;` evaluates the right side and stores it in the variable, **replacing** the old value. The left side must be the variable; the right side is the expression.

Tracing

```
int x = 4;
x = x + 3;   // x is now 7
```

Input

A `Scanner` reads values typed by the user, e.g. `int n = sc.nextInt();`.

2 Practice

2.1 State what the assignment operator does. [1]

2.2 Trace: `int y = 10; y = y * 2; y = y - 5;`. State the final value of `y`. [2]

2.3 Name the class commonly used to read user input. [1]

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3 Exam-style questions

3.1 After `int a = 3; a = 8;`, the value of `a` is [1]

- **A** `3`
- **B** `8`
- **C** `11`
- **D** `5`

3.2 In `x = y + 2;`, the left side is [1]

- **A** the expression
- **B** the variable being assigned
- **C** a method call
- **D** program output

3.3 Trace: `int n = 5; n = n + 1; n = n * 3;`.

(a) State the value of `n` after `n = n + 1`. [1]

(b) State the value of `n` after `n = n * 3`. [1]

(c) Name the class used to read input. [1]

4 Go further

- work through the **1.4 Assignment Statements and Input** lesson on the **Learn** page;
- read the **Primitive Types** section of the AP Computer Science A handout on the **Know** page.

Solutions

2.1 it stores the value of the right-side expression in the left-side variable, replacing the old value.

2.2 $10 \times 2 = 20$, then $20 - 5 = 15$.

2.3 `Scanner`.

3.1 B.

3.2 B.

3.3 (a) `6`. (b) `18`. (c) `Scanner`.