

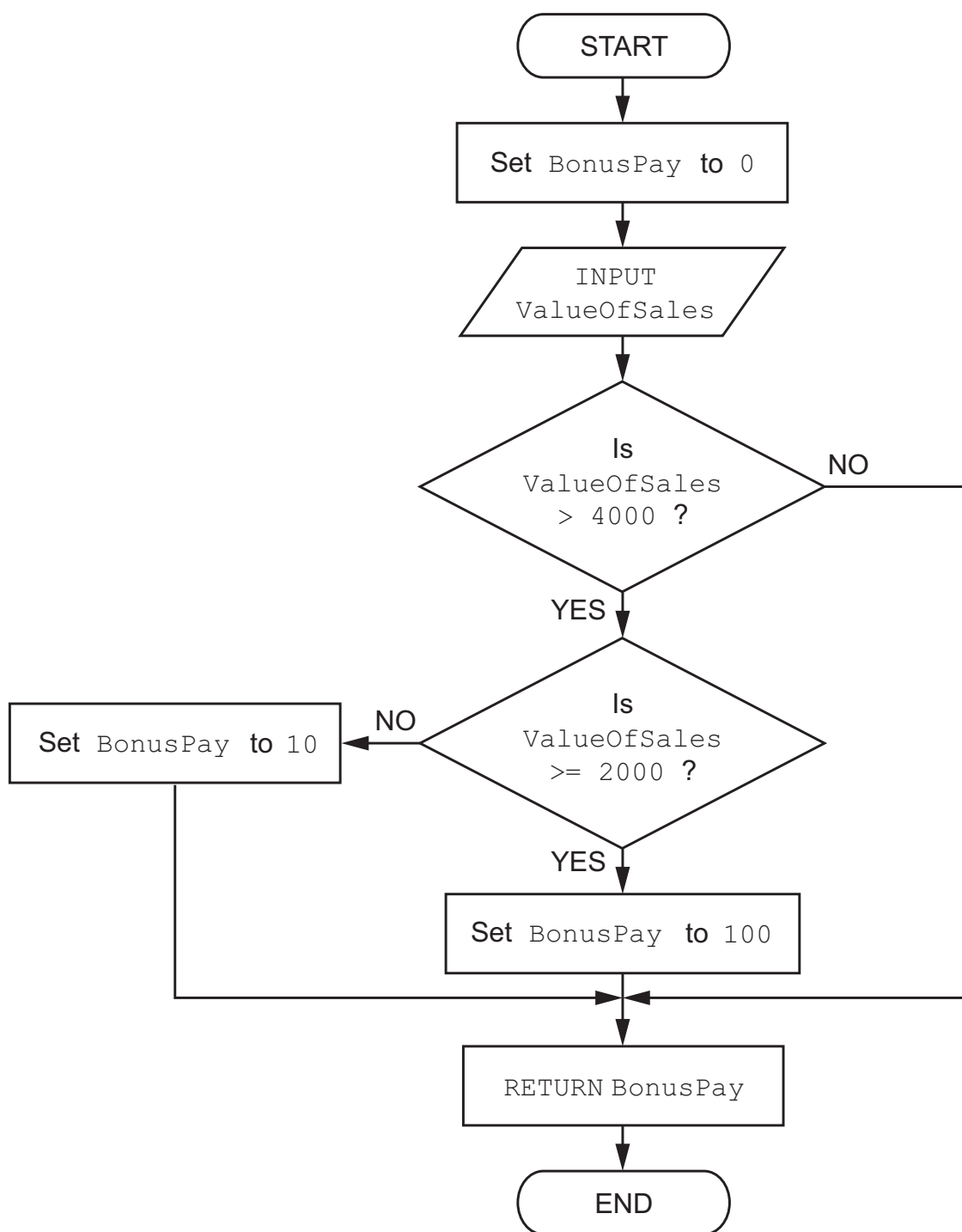
2 A program is being developed to calculate the pay of employees working for a company.

A function `CalculateBonus()` calculates bonus pay based on the value of sales.

Bonus pay is calculated as shown in the table.

Value of sales (in dollars)	Bonus pay (in dollars)
below 2000	0
between 2000 and 4000 inclusive	10
above 4000	100

A flowchart for the function `CalculateBonus()` has been designed.



(a) The flowchart contains logic errors.

One logic error is that `BonusPay` will **not** be set to 10 although the `ValueOfSales` input is between 2000 and 4000 inclusive.

(i) Explain why this error occurs.

..... [1]

(ii) Explain how this error could be corrected.

..... [1]

(b) There are different ways to reduce the risk of errors when developing the new program, such as the use of constants.

(i) State a value that could be replaced by a constant in the function `CalculateBonus()`

..... [1]

(ii) Explain how the use of constants helps to reduce the risk of programming errors.

..... [2]

(iii) One other way that can reduce the risk of errors when writing the program is the use of library routines.

Explain how library routines can reduce the risk of programming errors.

..... [1]

(c) All the logic errors have been corrected, and the program has been coded.

Identify and describe **two** other types of error that the program could contain.

Type of error

Description

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