4 A program includes the following assignment statement:

```
Result ← STR_TO_NUM(x) / STR_TO_NUM(y)
```

When the program evaluates the expression in the statement, it performs a calculation.

Variable `Result` is of type real and variables `x` and `y` are of type string.

Two checks are required before the calculation is performed:

1. The two strings represent valid numeric values.
2. The numeric value of string `y` is not zero.

(a) Identify the type of error that could occur if these checks are **not** carried out **and** state a cause of this error.

Type ....

....

Cause ....

.... [2]

(b) The designer considers implementing the **checks and calculation** as a module (a procedure or a function). One reason for this is that the same checks and calculations are performed at several places in the program.

Give **another** reason why this is a suitable approach **and** state what is avoided by this approach.

Reason ....

....

Avoided ....

.... [2]

(c) The module to perform the checks and calculation will be implemented as a function. The function will need to return both a real **and** a Boolean value. To achieve this a record type is defined in pseudocode as follows:

```
TYPE Result
   DECLARE Done : BOOLEAN
   DECLARE Value : REAL
ENDTYPE
```

The function `Evaluate()` will:

- take two parameters of type string representing the two numeric values
- return a variable of type `Result` with the `Done` field set to `FALSE` if either of the following applies:
  - at least one of the strings does **not** represent a valid numeric value
  - the numeric value of the string representing value `y` is zero
- otherwise return a variable of type `Result` with the `Done` field set to `TRUE` and the `Value` field assigned the result of the formula (based on the numeric value of the two parameters).

Write pseudocode for the function `Evaluate()`.

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....

....

.... [6]