# Module 3a: Practice Problem Solution

## Defining Diagram

|  |  |  |
| --- | --- | --- |
| **Input** | **Processing** | **Output** |
| integer1  integer2 | Get integers  Read integers  Calculate sum, difference, product, quotient  Print results | sum  difference  product  quotient |

## Solution Algorithm

BEGIN CALCULATE\_INTEGER\_VALUES

1 Prompt user for integer1, integer2

2 Read integer1, integer2

3 Set sum = integer1 + integer2

4 Set difference = integer1 – integer2

5 Set product = integer1 \* integer2

6 IF integer2 NOT = 0 THEN

quotient = integer1 / integer2

ELSE

quotient = 0

ENDIF

7 Display 'The sum is', sum

8 Display 'The difference is', difference

9 Display 'The product is', product

10 IF quotient NOT = 0 THEN

Display 'The quotient is', quotient

ELSE

Display 'The quotient could not be determined'

ENDIF

END

## Desk Checking Table Method Input Test Data

|  |  |  |
| --- | --- | --- |
|  | **First data set** | **Second data set** |
| integer1 | 20 | 100 |
| integer2 | 2 | 0 |

### Expected Result

|  |  |  |
| --- | --- | --- |
|  | **First data set** | **Second data set** |
| sum | 22 | 100 |
| difference | 18 | 100 |
| product | 40 | 0 |
| quotient | 10 | Error |

### Desk Checking Table

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Statement Number** | **integer1** | **integer2** | **sum** | **difference** | **product** | **quotient** |
| **First pass** |  |  |  |  |  |  |
| 1,2 | 20 | 2 |  |  |  |  |
| 3 |  |  | 22 |  |  |  |
| 4 |  |  |  | 18 |  |  |
| 5 |  |  |  |  | 40 |  |
| 6 |  |  |  |  |  | 10 |
| 7, 8, 9, 10 |  |  | display | display | display | display |
| **Second pass** |  |  |  |  |  |  |
| 1,2 | 100 | 0 |  |  |  |  |
| 3 |  |  | 100 |  |  |  |
| 4 |  |  |  | 100 |  |  |
| 5 |  |  |  |  | 0 |  |
| 6 |  |  |  |  |  | 0 |
| 7, 8, 9, 10 |  |  | display | display | display | error message |