

003 An algorithm a day...

Algorithm Question

Source: OCR GCSE Computing Exam Jan 2011

A program has been written to obtain 3 random virtual dice rolls:

```
DiceRoll(1) = Random Number 1-6  
DiceRoll(2) = Random Number 1-6  
DiceRoll(3) = Random Number 1-6  
DISPLAY DiceRoll(1)  
DISPLAY DiceRoll(2)  
DISPLAY DiceRoll(3)
```

Rewrite this algorithm in pseudocode so that it makes use of iteration.

[4 marks]

Algorithm Example Answer

A program has been written to obtain 3 random virtual dice rolls:

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```

Rewrite this algorithm in pseudocode so that it makes use of iteration

[4 marks]

*****There are always different ways to solve a problem. This algorithm is just an example. What is important is that the logic is correct!*****

LOGIC:

- **Use of a FOR or WHILE loop**
 - **If a FOR loop used: must loop for 3 iterations**
 - **If a WHILE loop used: condition must allow for only 3 iterations (may require a counter being incremented / decremented)**
- **Within each loop:**
 - **Creation of random number**
 - **OUTPUT of dice generated**

EXAMPLE ALGORITHM:

FOR LOOP EXAMPLE:

```
FOR counter 1 - 3:
    dice_number = Random Number 1-6
    OUTPUT dice_number
```

WHILE LOOP EXAMPLE:

```
counter = 3
WHILE counter !=0:
    dice_number = Random Number 1-6
    OUTPUT dice_number
    counter = counter - 1
```