

- 7 Julie is writing a computer game that simulates a 100 m race. Each time the space bar is pressed, the position of the player moves up by 1. When the position reaches 100, the player has won.

Here is Julie's algorithm for the program

```
CONST PlayerKey = " "  
Position = 0  
REPEAT  
  INPUT KeyPressed  
  If KeyPressed = PlayerKey THEN  
    Position = Position + 1  
  END IF  
UNTIL Position = 100
```

- (a) State an example of a constant and a variable in the algorithm above.

Constant

Variable

[2]

- (b) State what is meant by selection and iteration using examples from Julie's algorithm.

Selection

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Example

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Iteration

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Example

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[4]

- (c) To make the game more interesting, Julie changes the rules. Each time the spacebar is pressed, the position of the player will now move up by a random number.

State **two** changes that need to be made to include this new rule. Justify each change.

Change 1

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Justification

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Change 2

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Justification

.....

[4]