**Question 1**

a) Errin is a member of a rugby club. She is sent an email asking if she could write a program to find the name of the player who scored the most points in the club’s last season. A text file containing the names of every player in her rugby club, along with last season’s points, is attached to the email. The text file, containing 64 players, is formatted as shown below.

Heather,47

Poi,212

Janet,33

Kirsty,10

Debbie,120

Anna,146

Manute,192

Georgie,75

Before she writes the program, Errin scribbles out an algorithm defining the main steps that will be required to solve the problem.

1. initialise variables and data structures
2. read data from text file into two arrays
3. using one of the arrays calculate the position of the largest score
4. display the name of the player who scored the most points

 Assuming Errin called her arrays ‘playerNames’ and ‘playerScores’ write one function and one procedure that will meet the requirements of steps 2 and 3 in Errin’s algorithm.

Function to implement step 2 of the algorithm (8 marks)

Procedure to implement step 3 of the algorithm (4 marks)

b) When the position of the largest score in the ‘playerScore’ array is passed into the procedure implemented for step 3 of the algorithm would it be passed *by* *value* or *by* *reference*?
Explain your answer. (2)

 Value or Reference: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Explanation: \_\_\_\_\_\_\_\_\_\_­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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c) Write a single line of code that could be used to open the text file, called “Rugby Members”, before its contents are copied into the two arrays. (3)

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d) As previously stated, the contents of the text file are stored in two arrays. Describe an alternative *data structure* that could be used to store all of the player’s names and scores when they are read from the text file. (2)

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e) The algorithm has a logic error as it assumes that two players don’t have the same largest score. Describe how you would fix this error. (2)

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Bonus Question (beyond Higher for those who like a challenge 😊)

f) Describe a method that could be used to find the second highest scorer in the rugby club.

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