# Homework 3 Functions and Procedures

1. Complete the paragraph, using the words provided.

[call] [decompose] [function] [return] [subroutine]

It can be helpful to have a block of code that is separate to the main program – this is called a \_\_\_\_\_\_\_\_­­\_\_\_\_\_\_\_­­­­­­. It can often be helpful to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a problem by identifying the small-medium sized tasks and separating them out in order to tackle them individually. The main program will then \_\_\_\_\_\_\_\_\_\_ each one as and when it needs to.

A \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a subroutine that may or may not \_\_\_\_\_\_\_\_\_\_\_\_\_ a value to the rest of the program. [5]

2. Study the program and then answer the questions below it.

#Program L3 HW3 Guess number

import random

def getGuess():

 guess = 0

 while guess < 1 or guess > 100:

 guess = int(input("Enter a guess between 1 and 100: "))

 return guess

def displayRules():

 print("This is a guessing game.")

 print("You have to guess the number between 1 and 100 \

chosen by the computer")

def playGame(target):

 guessedNumber = False

 guess = getGuess()

 while guess != target:

 if guess > target:

 guess = int(input("Too high - guess lower: "))

 elif guess < target:

 guess = int(input("Too low - guess higher: "))

 else:

 guessedNumber = True

 print("\nThat's correct, well done!")

 return guessedNumber

#main

choice = "0"

while choice != "3":

 print("\nMain Menu")

 print("1. Display the rules")

 print("2. Play the game")

 print("3. Quit")

 choice = input("Choose an option: ")

 if choice == "1":

 displayRules()

 elif choice == "2":

 guessedNumber = playGame(random.randint(1,100))

 elif choice !="3":

 choice = input("Invalid choice - must be between 1 and 3: ")

input("Goodbye ... press Enter to Quit program ")

(a) Identify a call statement which passes a parameter to a function. [1]

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(b) Identify a call statement which does not pass a parameter, but which accepts
a return value from the function. [1]

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 (c) Explain, in general terms, what the value of the parameter **target** in the function **playGame()** is and how it is assigned this value. [3]

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**3.** Write an explanation of how subroutines can be used by programmers and how this can help the development process.

 You will be assessed on your use of written language and technical terms. [5]

 [Total 15 marks]