# Homework 2 Answers

1. **Comparison operators**

Complete the table below:

|  |  |
| --- | --- |
| Operator | Name |
| == | Equal to |
| != | Not equal to |
| < | Less than |
| > | Greater than |
| <= | Less than or equal to |
| >= | Greater than or equal to |

[3]

1. **Selection statements**

Complete the following selection statements by filling in the blanks:

if score == 1337:  
 print(“1337 is the maximum score – have 5 extra lives!”)  
 lives = lives + 5  
elif score >= 1000:  
 print(“Scoring 1000 or more grants you 3 extra lives!”)  
 lives = lives + 3  
elif score <= 500:  
 print(“That score is terrible. Have an extra life and try again.”)  
 lives = lives + 1  
else:  
 print(“A pitiful attempt! Lose a life!”)  
 lives = lives - 1  
 [5]

1. **Choosing Loops**

Explain how you would choose whether to use a FOR loop or a WHILE loop. [4]

FOR: When a block of code needs to be repeated a set (or known) number of times

WHILE: When the number of repetitions of a block of code is not known / until a certain  
 condition is met

1. **For Loops**

Describe the outputs of the following programs

|  |  |
| --- | --- |
| Program | Output |
| for count in range(3):  print(“CS FTW!”) | CS FTW! CS FTW! CS FTW! |
| for count in range(2):  print(count) print(“Finished!”) | 0 1 Finished! |
| for count in range(3):  print(“This is step”, count+1) | This is step 1 This is step 2 This is step 3 |
| for count in range(3):  print((count+1)\*3) | 3 6 9 |

[4]

1. **While Loops**

Complete the table to explain the purpose of each of these while loops.

|  |  |
| --- | --- |
| Program | Explanation |
| lives = 5  while lives > 0:  # Play game, set loseALife to True or False if loseALife == True:  lives = lives – 1  print(“Game Over!”) | Loop repeats until the user  runs out of lives |
| realPassword = “P@ssw0rd” password = input(“Enter your password: ”) while password != realPassword:  print(“Password incorrect”)  password = input(“Enter your password: ”) | Loop repeats until the user enters the correct password (P@ssw0rd) |
| again = “y” while again == “y”:  # Perform some action  again = input(“Go again? y/n: ”) | Loop repeats until the user enters anything other than ‘y’ when prompted |
| bill = 0 budget = 100 while bill <= budget:  price = float(input(“Price of  item: ”))  bill = bill + price print(“Sorry, just over budget!”) | Loop repeats until the user  goes over the budget amount |

[4]

[Total 20 marks]