# Worksheet 1 Recap of Skills Answers

1. **Debugging**

Rewrite and test the following code, making sure you remove all of the errors.

target = 12  
guess = 1  
userChoice = int(input(“Guess the number: ”))  
while userChoice != target:  
 guess = guess + 1  
 if userChoice < target:  
 print(“Guess higher!”)  
 else:  
 print(“Guess lower!”)

userChoice = int(input(“Guess the number: ”))  
print(“It took you” , guess, “guesses”)

[Reward students who rename the ‘guess’ variable to ‘guesses’ throughout]

***See program L1 WS1 Ex1.py in NEA Python programs folder***

1. **Inputs & Outputs**

Rewrite and test the following code, making sure you remove all of the errors.

[Note the spaces throughout – also highlighted in red]

worldRecord = False  
lane = 1  
athlete = input(“Who is in lane ” + str(lane) + “? ”)  
country = input(“Which country does ” + athlete + “ represent? ”)  
time = float(input(“Enter the 100m time for ” + athlete + “: ”))  
  
if time < 8.0 or time > 20.0:  
 time = “invalid”  
elif time < 9.58:  
 worldRecord = True  
  
print(“Competitor: ” + athlete)  
print(“Country: ” + country)  
print(“Lane number: ” + str(lane))  
print(“100m time: ” + str(time))  
print(“New world record: ” + str(worldRecord))

***See program L1 WS1 Ex2.py in the Sample programs folder***

1. **Arithmetic**

Write a program for each of the following tasks:

Example solutions – reward any successful program

num1 = int(input(“Enter an integer: ”))  
 num2 = int(input(“Enter a second integer: ”))  
 print(“Total = ” + str(num1 + num2))  
 print(“Difference = ” + str(num1 - num2))  
 print(“Product = ” + str(num1 \* num2))  
 print(“Division = ” + str(num1 / num2))  
 print(“Floor division = ” + str(num1 // num2))  
 print(“Modulo = ” + str(num1 % num2))  
  
 length = int(input(“Enter length: ”))  
 width = int(input(“Enter width: ”))  
 height = int(input(“Enter height: ”))

print(“Volume = ” + str(length \* width \* height))

num1 = int(input(“Enter a number: ”))  
 num2 = int(input(“Enter a number: ”))  
 num3 = int(input(“Enter a number: ”))  
 num4 = int(input(“Enter a number: ”))  
 num5 = int(input(“Enter a number: ”))  
 total = num1 + num2 + num3 + num4 + num5

print(“Total = ” + str(total))  
print(“Mean average = ” + str(total/5))

pi = 3.14

radius = int(input(“Enter the radius: ”))  
 print(“Circumference = ” + str(2 \* pi \* radius))

print(“Area = ” + str(pi \* radius \*\* 2))

num = int(input(“Enter a number: ”))  
 print(“Squared = ” + str(num \*\* 2))

print(“Power 6 = ” + str(num \*\* 6))

print(“Square root = ” + str(num \*\* (1/2)))

***See program L1 WS1 Ex3.py in the Sample programs folder***

1. **Extension**

Find a copy of some typical formulae you would need for maths (or physics).

You might have a reminder of the key formulae in your student planner, in a text book or in your exercise book. If you don’t have one then try searching for “gcse maths formulae” online.

Create a program that will carry out calculations using a wide range of different formulae – making sure you can complete the formulae with whole numbers and with fractional numbers where necessary.

Create a menu system so that the user can choose which calculations to carry out.

A wide range of possible solutions

Menu systems are covered in more detail in section 10