**Programming Exercises**

1. Write a program where the user inputs two numbers and outputs their sum and product. The program must repeatedly ask for two numbers until a number of -1 is entered.

2. Input two numbers. If they have different values, output the higher value otherwise output a message saying they are equal. The program must repeatedly ask for two numbers until a rogue number of 0 is entered.

3. Using a loop structure, output the integers 1 to 5 inclusive.

4. Using a loop structure, output the even integers between 0 and 10.

5. Write a program where the sprite draws an equilateral triangle with a side length specified by the user.

6. Write a program where the user enters the number of sides of the polygon, and the sprite draws an equal-sided polygon.

7. Modify the program in question 6 so that the program runs repeatedly until the user enters a rogue value of -99

8. Calculate the area of a rectangle given the formula Area = Length multiplied by Width. Input each set of Length and Width until a rogue Length of -1 is entered.

**Do planning for the following questions. Remember the mini-algorithms for counter, sum, average, maximum and minimum.**

1. a) Calculate the Cost of a product given the formula Cost = Quantity multiplied Unit Price and Total Cost is given by the formula Total Cost = Cost multiplied by 0.125 plus Cost. Input the Quantity and the Unit Price until a rogue Quantity of -99 is entered.

b) Modify the solution to ques 9a so that it also prints out the sum of all the Total Costs calculated.

1. Output the integers from 20 to 25 inclusive and their sum.
2. Write a program to print out the 5 times table up to 12 \* 5.
3. Modify question 11 so that the user can enter which times table they want displayed.

13. Input two positive integers. Assume that the 2nd is bigger than the 1 st and output the sum of the integers between them.

14. Input a series of letters. End with a "rogue" of a full stop. Output the number of letters entered.

1. Input a series of letters. End with a "rogue" of a full stop. Output the number of g's entered (there may not be any).
2. Input a "target" letter, followed by a series of letters. End with a "rogue" of a full stop. Output the number of times the target letter was entered in the series.
3. Input a series of numbers. End with a "rogue" of 999. Output the number of positive numbers in the series Output the number of negative numbers in the series Output the number of zeros in the series
4. Input 10 numbers between 0 and 100. Output the highest value.
5. Input 10 numbers between 0 and 100. Output the lowest value.
6. Input 10 numbers between 0 and 100. Output the maximum, minimum and mean (average) values.
7. Input a series of numbers. End with a "rogue" of 999; Output the maximum, minimum and mean (average) values.
8. Produce the 2 times table (to 5 x 2) in the form

1 x 2 = 2

2 x 2 = 4

3 X 2 = 6

4 X 2 = 8

5 X 2 **= 10**

1. Modify problem 18 above so that any positive integer can be entered from the keyboard and the times table for that number will be printed (up to 5 times)

e.g.

What times table do you want? **40** 1 x **40 = 40 etc**

1. For each of a set of students, take in a name and mark. Output the name and mark of the best student. The delimiter is "Quit" for the name.
2. For a group of employees, take in their name, hours, and pay rate. Calculate their gross pay, tax and nett pay(tax at 25% of gross), and output them. The delimiter is "Quit" for the name.
3. For a group of employees, take in their name, hours, and rate. Calculate their gross pay, tax and nett pay, and output them. Tax is at 25% on the first $100, with the remainder at 33%. The delimiter is "Quit" for the name. At the end, also output the number of employees, and the total nett pay and the total tax for the group.