If you like, you can use the for loop to solve the problems below.

0. Do the problems in the class notes on pages 59-62.

1. Write a loop that repeatedly asks your user for their name. If the name entered is “Godot”, print "Finally …Godot, what took so long??" and then exit. If is anything else, say “Bob”, print “Hello Bob … waiting, waiting, waiting …”

2. Input an integer n. Print out the integers 1 –n, one number per line.

3. Input an integer n. Print out the integers 1 –n, five numbers per line (except for possibly the last one).

4. Input two integers, m and n. Print out the integers 1 – m, n numbers per line (except for possibly the last one).

5. Write a loop that repeatedly inputs integers until your user entered the word done. Print the sum of the integers entered.

6. Modify the program above so that you print the average as well.

7. Input an integer n. Calculate an “alternating sum” of the numbers 1 –n =1-2+3-4 … ±n. Print out the result.

8. Write a program that prints out the pairs of numbers (1,1), (1,2), …(1,5), (2,1), (2,2), … (5,5).

9. The greatest common divisor (GCD) of the two integers 4 and 2 is 2. The greatest common divisor of the two integers 16 and 24 is 8. How do you find the greatest common divisor? Let the two input integers be n1 and n2. You know that number 1 is a common divisor, but it may not be the greatest common divisor. So you can check whether k (for k =2, 3, 4, and so on) is a common divisor for n1 and n2, until k is greater than n1 or n2. Store the common divisor in a variable named gcd. Initially, gcd is 1. Whenever a new common divisor is found, it becomes the new gcd. When you have checked all the possible common divisors from 2 up to n1 or n2, the value in the variable gcd is the greatest common divisor.

Write a program to input two values n1 and n2 and print the GCD.

10. Write a program that asks the user for an integer n. Using n, print a pattern like the one below. n will be the number of lines printed, so the example below is for n=8.

Notice that the middle number on line k is 2^{k-1}. So the middle number on line 1 is 2^0=1, and the middle number in line 8 is 2^7 = 128. – see below.