1. Write a function power(a,b) , to calculate the value of a raised to b.

2. Consider the following process which can be applied to any positive integer: if the integer is odd multiply it by three and add one. If the integer is even divide it by 2. This process is repeated until integer remaining is 1. Ex. The following sequence is 34, 17, 52, 26, 13, 40, 20, 10, 5, 16, 8, 4, 2, 1 stop the process when 1 occurs. Write a function to determine how many steps are required to complete this process. Use functions.

3. Write a function that simulates coin tossing. For each toss of the coin , the program should print heads or tails. Let the program toss the coin 100 times and count the number of times each side of the coin appears. Print the results. The program should call a separate function flip() that takes no arguments and returns 0 for tails and 1 for heads.

4. Write a program that converts from 24-hour notation to 12-hour notation. For example , it should convert 14:25 to 2:25PM.The input is given as two integers. There should be at least three functions, one for input, one to do the conversion and one for output. Record the AM/PM information as a value of type char , ‘A’ for AM and char ‘P’ for PM . Thus the function for doing the conversions will have a call-by-reference formal parameter of type char to record whether it is AM or PM .

5. Write a function to perform multiplication of two complex numbers. The value parameters to the function should be real1, imag1m reak2, imag2 and the reference parameters should be realpart and imagpart. The formula is

(a+ib) X (c+id) = (ac-bd)+i(bc+ad)

6. (i)Write a function nextday() to transform a given month day and a year into the after.

(ii)Write a function prevday() to transform a given month day and a year into the before.