CS 100
Lab #6

1. Write a program that asks the user two inputs, x and n, and then computes the x^n . Note that you can not use the power operator ^. Instead use **for** or **while** loops. Output your result to the user by using **fprintf**.

2. Write a program that takes an integer, x, from the user and then finds the largest digit in the x. For example, the largest digit in 653249 is 9. You can use the **mod** method of Matlab which to get the reminders from divisions.

3. Write a program that takes 100 integers from the user one by one. For each integer input x, if x is odd then compute x^2 and return the result to user. Otherwise compute x^3 and return the result to the user. Hint: You can use the **mod** method to check whether x is odd or not.

4. Rewrite a program in question 3 but this time your program stops (halts) if the user enters a negative integer.

5. What are the values of variables, x, sum, and i after each iteration (i.e. in the place of red line). What is the final value of each variable?

```
sum = 0;
x = 64;
for i = 0:2:10
     sum = sum + i;
     if x <= 10
          sum = sum – i;
     end
     x = x / 2;
                  ____________ (assume each iteration end here)
end
(report the final value when the loop ends here)
```

6. Given a 2x5 array A (as shown below), each column vector represents the dimensions of a rectangle. Calculate the area of each rectangle and return the result to the user as below.

2	4	10	9	24
3	5	56	-1	7

```
>> The area of rectangle 1 is 6.
The area of rectangle 2 is 20.
The area of rectangle 3 is 560.
Invalid dimension. The area can not be computed.
The area of rectangle 5 is 168.
```