**BIL108E Introduction to Scientific and Engineering Computing
Homework 1**

Attention: Please be aware that the deadline for Homework1 is 23/03/14 until 11.00 pm. **Late submissions will not be accepted.** Do not submit "similar" papers, they will not be graded. The solution of each question must be submitted separately via Ninova in " *.m " file format (MATLAB file): e.g: SQ1.m and SQ2.

Q1. 1 (50 points)- Assuming no air resistance, we can calculate the time of flight for a cannon ball by using the following closed-form equation:

$$t = \frac{2v \sin\theta}{g}$$

In the equation, t is the time in seconds, v is the muzzle velocity when the cannon ball leaves the cannon, and θ (theta=π/6) is the angle from horizontal of the initial flight path. Assume that the gravitational constant

g=9.81m/s^2
If we increase the velocity (v) from 10 m/s to 100 m/s with increments of 5 m/s, calculate t and plot v versus t using MATLAB.

Q2. (50 points)- Ask the user to input an integer. Print "Even" if the number is even. Print "Odd" if the number is odd. Use the rem function to test for an even or odd number. The rem (X,Y) function returns the remainder of dividing X by Y.

If rem (X,2) = 0, X is even. If rem (X,2) = 1, X is odd.

Use an if-else statement in your MATLAB solution.