Part II.

1. Create a C++ console application project in Visual Studio 2012 and name your project YourLastName5.
2. Write a program that implements the Euler's, the Heun's, and the Runge-Kutta Methods to find numerical solutions to the ODE's given in class.
3. Write a separate function for each of the following (eight functions in total).
   - Euler's method 1
   - Heun's Method 2
   - Runge-Kutta's Method 3
   - Each of the x' 4
4. All floating point arithmetic will be double precision.
5. Input to the main program
   - Choice of an ODE and the analytical solution
   - Interval, $[a, b] = [t_0, t_N]$
   - Initial value, $x(a) = x(t_0)$
   - Integer N, the number of sub intervals
6. Program output:
   1) A table containing the following values.

t_0	$x(t_0)$
t_1	$x(t_1)$
t_2	$x(t_2)$
t_3	$x(t_3)$
t_4	$x(t_4)$
t_5	$x(t_5)$
t_6	$x(t_6)$
t_7	$x(t_7)$
t_8	$x(t_8)$
t_9	$x(t_9)$
t_N	$x(t_N)$

   2) The relative error with $x(t_N)$ 5

7. Test the three methods on the five ODE's with 1) N= 10 and 2) N= 100.