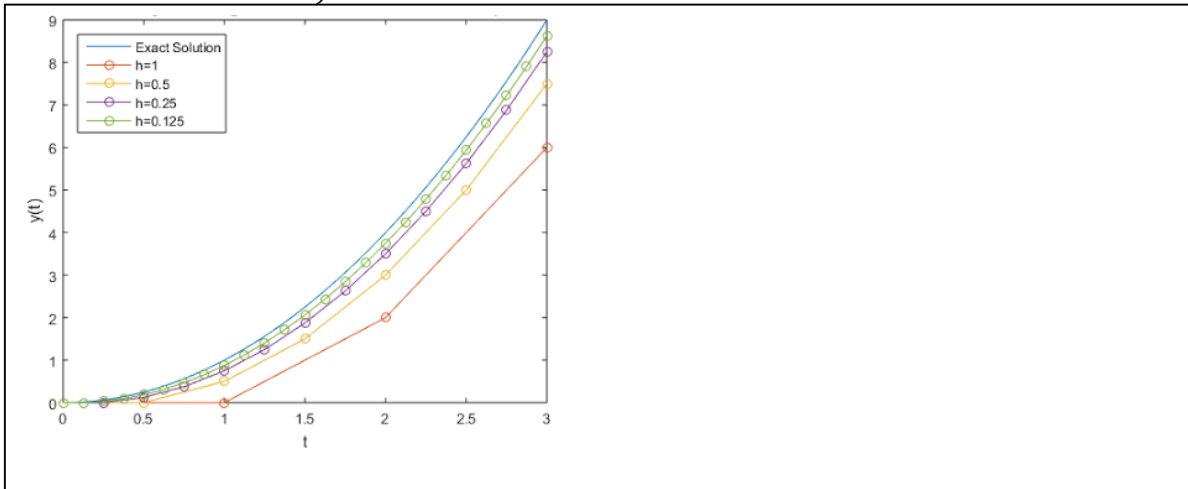


Student ID:
Name Surname:

Matlab Programming course Final exam (2015-2016 Fall)
(Please use free space for draft and fit your answer to boxes.)

1. (20P) Prepare the MATLAB codes to draw the chart below (at workspace, vector t and matrix y with 5 columns is loaded).



2. (30P) Let a function " $rDs = \text{myRotate}(Ds, a1, a2)$ " rotates a group of points at three dimensional axis as much as given angles. Thus, to determine the most meaningful component of matrix Ds (100×3) loaded at workspace, by using angles between $[0 \pi/2]$, you should find such two angles combination ($a1$ and $a2$) that standard deviation of rotated Ds points reaches its maximum value in any axis.

3. (20P) Let three matrices (a, X and Y) are loaded at workspace. Between these values, there is an approximate relation as $Y = aX$. Thus, prepare MATLAB codes to find location (row-column) of the maximum difference between product of aX and matrix Y.

4. (30P) Let we have a function called "M = myMed(V)" to find median value of a given parameter vector V and a gray image called Img (500x500px) loaded at workspace. To clean some small noises at the image, by moving a square matrix (3x3px) on the image, determine the median value of intersection of the image and the matrix, and then update the image pixels corresponds to center of the matrix (2.row-2.column) by this median value.