DIABLO VALLEY COLLEGE	© *Copyright*	ENGINEERING DEPARTMENT
Assignment 19		*Seyyed Khandani*
Computer Programming for Engineers Using *MATLAB*(ENGIN 136)		

The speed of a missile (v) is measured starting from time (t) zero and every minute for the next ten minutes. Using this data, you are tasked to write a script to calculate its acceleration, and its traveled distance based on the following guidelines:

(1) The script allows the user to input eleven data points for t and v starting from the initial launch time of 0 minute.
(2) The script calculates and displays the missile's total travel distance (dist) during this period using the trapezoids numerical method. Note that:

$$dist = \int v\, dt$$

(3) Fit the data with a cubic polynomial function and use the function to again calculate and display the total distance travel using the *quad( )* function.

(4) The script also calculates the acceleration (a) of the missile every minute during this period using the gradient numerical method and then plots the acceleration versus time. Note that:

$$a = dv/dt$$

(5) Test the script using the following data set:

(6) Submit a copy of the script file, with the input/output data copied and pasted to bottom of this file as comments, and a copy of the plot file in only jpg format.

t(min)	0	1	2	5	4	3	6	8	7	9	10
v(Km/min)	0	10	25	100	70	45	145	240	200	260	260