Lab 2.

Riemann Sums.

As a lead-in for this problem you should work problem 49 on page 333. We will take that problem and spice it up a bit, by not assuming that the deceleration is constant. In fact the speeds are noted at every half second as follows:

t=0	v=80
0.5	79.3
1	77.2
1.5	73.67
2	68.64
2.5	62.02
3	53.7
3.5	43.53
4	31.34
4.5	16.91
5	0

Use Maple to plot this data.
If you could calculate

$$s = \int_0^5 v\,dt,$$

what would it represent? What are the units? Determine both the left and right sums for this. Now take the average of these two. This average is the Riemann sum as determined by what is called the trapezoid rule. Now use this trapezoid rule to generate a graph of distance traveled during braking against time, by computing the distance traveled at each of time intervals in the table.

How far does the car go in the first second of braking? in the last second?