MA 182 GROUP WORK (5.9)

NAME _____ Due Thursday 2/19/09

1.   An object travels with the **velocity** given in the graph below.
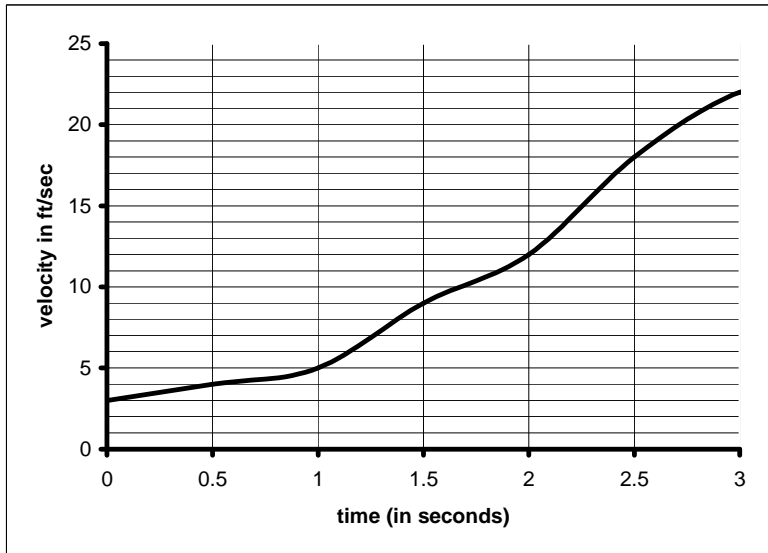
Estimate the total distance that the object travels from t = 0 to t = 3

A.   the Midpoint Rule with n = 3

B.   Simpson's Rule with n = 6 (note formula on page 418)

2. Given the integral $\displaystyle\int_{4}^{6} \ln(x^3 + 2)\,dx$,

A. Find the approximation T_{50} for this integral. (Use calculator program.)

B. Is the answer to part A. an overestimate or an underestimate? Explain.

C. Estimate the error in the approximation in part (a) by using the formula for $|E_T|$ on p. 415 of your textbook.

D. Determine the smallest value of n that can be used so that the approximation T_n to the given integral will be accurate to within 0.000001.