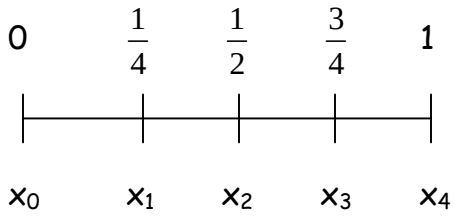
Data Entry for Section 5.8(TI85/6)

Approximate $\int_0^1 e^{\sin x}\,dx$ using the Trapezoidal Rule with n = 4 rounding to 5 decimal places.

With n = 4, then $\Delta x = \frac{b-a}{n} = \frac{1-0}{4} = \frac{1}{4}$. Enter $e^{\sin x}$ as y_1. We will now have the following partition:



1) So we need to enter 0, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, 1 as a list. We will go to the list menu, create the list and then store the list as x.

2nd - F1 data values **F2 STO x-var Enter**

2) Now we need evaluate the function using these x-values and store these function values as A.

2nd alpha 0 1 Enter STO LOG Enter

So now we have all the values for $f(x_i)$ stored as A. Now create a list for the coefficients, and we will store this list as M.

3) We need to enter 1, 2, 2, 2, 1 as a list.

2nd - F1 data values **F2 STO 8 Enter**

4) Next, we need to multiply the function values in A times the coefficients in the list stored as M. Then store this product, $f(x_i)$ * M, as B.

Alpha LOG X Alpha 8 STO Sin Enter

5) Now we need the sum of the values in the list B.

2nd X F5 F1 (Alpha Sin) Enter

This gives a sum of 13.06569, so $\int_0^1 e^{\sin x}\,dx \approx \frac{1}{8}(13.06569) = 1.63321$.