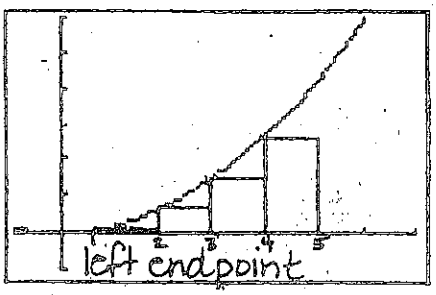
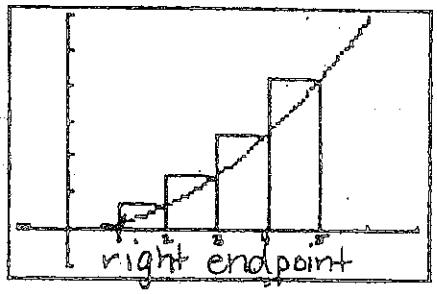
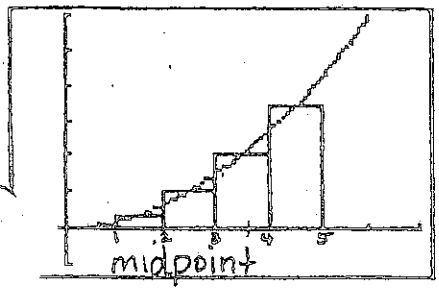
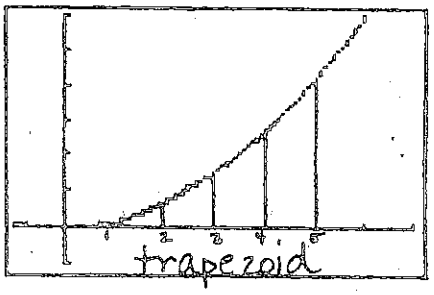
Finite Sums to Approximate Area

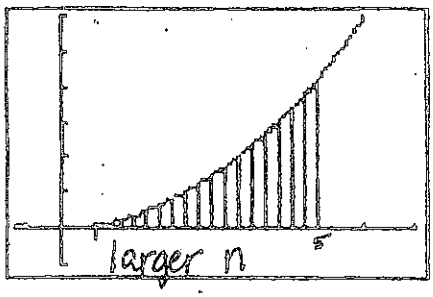
Numerically investigate the area under $y = x^2$ on the interval $1 \leq x \leq 5$

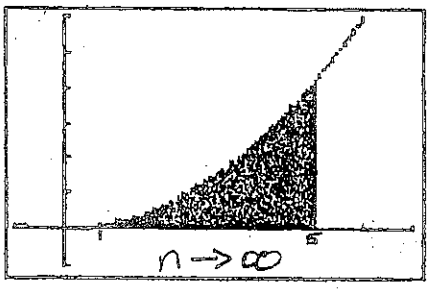












Below is the graph of $f(x) = \frac{1}{8}x^2 + 1$

consider the area bound by the x-axis, the function f(x), x=1, and x=5.
Using eight subintervals set up the sums used for the Left rectangle, Right rectangle, and Midpoint methods.

Left rectangle :

Right rectangle:

Midpoint: