

Calc II in class - Wednesday, June 16

The picture below shows the graph of $f(x) = e^{x^2}$ over the unit interval. We wish to estimate

$$\int_0^1 e^{x^2} dx$$

using approximating sums.

1. Suppose we'd like to estimate the integral to within 0.0001 of the actual value using a right sum.
 - (a) How many terms would we need in the sum?
 - (b) Write out the sum using summation notation.
 - (c) Use a computer to obtain the decimal approximation.
2. Suppose we'd like to estimate the integral to within 0.0001 of the actual value using a midpoint sum.
 - (a) How many terms would we need in the sum?
 - (b) Write out the sum using summation notation.
 - (c) Use a computer to obtain the decimal approximation.

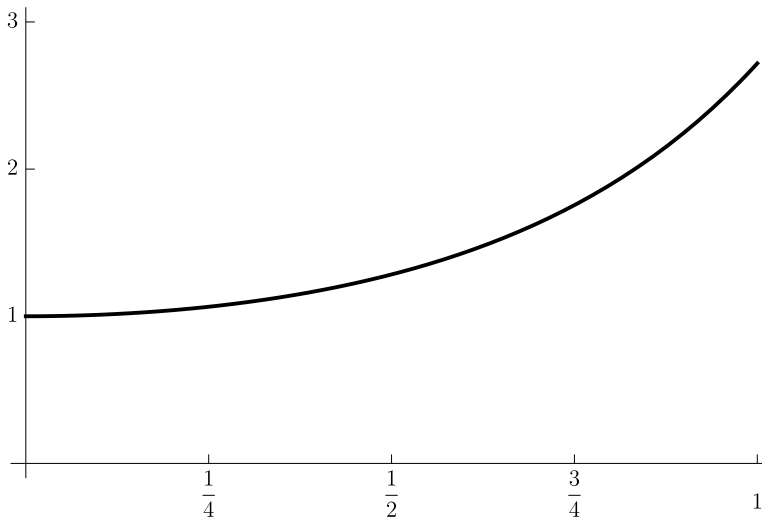


Figure 1: The graph of $f(x) = e^{x^2}$