

Due: Friday 30 November at 5pm in Beth's box

SECTION 5.1

Problem A: (This is a slight adjustment of #6 from your text.)

- (i) Use a graphing calculator or other graphing tool to sketch the graph of $g(x) = e^{x^2}$.
- (ii) Estimate the area under $g(x)$ on the interval $[-2, 2]$ using four approximating rectangles and taking the sample points to be MIDPOINTS.
- (iii) Sketch the curve and the rectangles from part (ii) (on the same graph).
- (iv) Estimate the area under $g(x)$ on the interval $[-2, 2]$ using eight approximating rectangles and taking the sample points to be MIDPOINTS.

SECTION 5.2

Problem B: Evaluate each of the integrals below by approximating the area with n rectangles and then taking the limit as n goes to infinity. That is, follow the model of example 2 in your text and/or the example we did in class. (These problems are also like problems 21-25 in this section.)

(i) $\int_0^5 (3 + 5x) dx$

(ii) $\int_1^4 x^2 dx$