A. Estimate \( \int_{1}^{3} x^2 \, dx \)

1. a. Estimate the integral using 4 rectangles and left endpoints.
   b. Did you underestimate or overestimate the area?
   c. Write out how the estimate was obtained.
   d. Write how the estimate was obtained using sigma notation.
   e. Graph the area and the four rectangles.

2. a. Estimate the integral using 4 rectangles and right endpoints.
   b. Did you underestimate or overestimate the area?
   c. Write out how the estimate was obtained.
   d. Write how the estimate was obtained using sigma notation.
   e. Graph the area and the four rectangles.

3. Write the integral as the limit of a sum.

B. Write \( \lim_{n \to \infty} \sum_{i=1}^{n} 3 \left( 5 + \frac{i6}{n} \right) \left( \frac{6}{n} \right) \) as a definite integral.