Homework 42 – Better Approximations and Exact Values of Integrals
AB Calculus – Mr. Oberle

For each of the following:

a) approximate the integral using a right-hand Riemann sum with 50 subdivisions,
b) approximate the integral using a right-hand Riemann sum with 100 subdivisions,
c) approximate the integral using a right-hand Riemann sum with *n* subdivisions,
d) and take the limit of your answer in part (c) to find the exact value of the area.

Write all your Riemann sums using sigma notation, and then use Wolfram Alpha (http://www.wolframalpha.com) to evaluate the sum. You can use the following format to find the sum:

"sum <your function> from k = 1 to k = n" will evaluate $\sum_{k=1}^{n}$ < your function >

1. $\int_{2}^{5} (10 - 2x)\,dx$
2. $\int_{1}^{4} (-x^2 + 5x - 4)\,dx$
3. $\int_{-1}^{2} x^4\,dx$

Answer Key: (1a) 8.82 (1b) 8.91 (1c) 9(n-1)/n (1d) 9 (2a) 4.4982 (2b) 4.49955 (2d) 4.5