Instructions

This Quiz is due at the start of class Monday February 13. You may discuss aspects of the following exercises with other students, but the work you turn in should be your own. Remember to show your work.

1. Estimate the area under the graph $f(x) = cos(x) + 2$ from $x = 0$ to $x = 2 * \Pi$ using six rectangles and

   (a) left endpoints,

   (b) midpoints.

   For each, sketch the curve and the approximating rectangles.

2. For the definite integral below, write the right endpoint Riemann sum in sigma notation for an arbitrary value of n. Then evaluate the sum as $n \to \infty$

$$\int_{-4}^{1} (5x^2 - 6x + 10)\, dx$$

3. If $F(x) = \int_1^x f(t)\, dt$, where $f(t) = \int_{t^3}^0 (\sin(u^2))\, du$, find $F''(2)$.

4. Evaluate $\int (\frac{x}{\sqrt{1-x^4}})\, dy$.

5. Find the area bounded by $x = y^2 + 1$ and $x = -y^4 + 3$.

6. Find the volume of the solid formed by rotating the region from the previous problem about the y-axis.