Homework Due Wednesday March 13

1. Read section §11.6 pages 673–679 on Simpson's rule.

2. Find the value of the following accurate to four decimal places. Your answers should be the form of one or more sentences that explain why your answer is correct.

   (a) $\int_0^2 \sin(x^2)\,dx$.

   (b) $\int_{-1}^3 \dfrac{dx}{\sqrt{4+x^4}}$.

   (c) The length of the graph of $y = \sin(x)$ from $x = 0$ to $x = \pi$.

   (d) The area bounded between the graphs $y = e^x$ and $y = 5 = x^2$. (This one will require two steps. First graph the two functions on the same graph to find where the two graphs intersect (getting these numbers will in turn involve blowing up the graphs so get the answers accurate to several decimal places). These points will then be used as the limits of integration in finding the area.)

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