

Lab-11

1. Write an adaptive Simpson's code for evaluating integrals. Use it to integrate the function $\sin(\frac{1}{x})$ from $x = 0.001$ to $x = 1$
 2. Evaluate the free particle wave function evolution that we discussed in the class yesterday. The integral you need to evaluate is: $\frac{1}{\pi\sqrt{2a}} \int_{-\infty}^{\infty} \frac{\sin(ka)}{k} \exp(i(kx - \frac{\hbar^2 k^2}{2m}t)) dk$
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