1. Let $\mathcal{I} = \int_0^1 x \sin(x^2)\, dx$

   a. Use Maple to draw and to calculate L_{10} and R_{10}

   b. How does $\mathcal{I}$ compare to L_{10} and R_{10}?

   c. Find the exact value of $\mathcal{I}$ by using u-substitution. Does this agree with your previous answers?

2. Let $\mathcal{I} = \int_{-2}^0 e^{x^2}\, dx$

   a. Calculate M_{100} and T_{100}.

   b. How does $\mathcal{I}$ compare to M_{100} and T_{100}?

   c. Use part b. to determine how close M_{100} is to the exact value of $\mathcal{I}$.

   d. Approximate $\mathcal{I}$ accurate within 0.001 of its value.