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

   a. Use Maple to graph 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 $\mathcal{I} = \displaystyle\int_{-2}^0 e^{x^2}\ dx$

   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.