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

1. Calculate L_4 by hand. Does this overestimate or underestimate $\mathcal{I}$?

2. Write L_{10} using sigma notation.

3. Use Maple to draw and to calculate L_{10} and R_{10}
   (use the *RiemannSum( )* command from the cheat sheet)

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

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