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

   1.1 Calculate L_{40} and R_{40}.
   How close are these to the actual value of $\mathcal{I}$?

   1.2 Approximate $\mathcal{I}$ accurate within 0.01

2. Let $\mathcal{I} = \int_0^{\frac{\pi}{2}} x\cos(x)\, dx$

   2.1 Calculate T_{40} and M_{40}. How close are these to the actual value of $\mathcal{I}$?

   2.2 Approximate $\mathcal{I}$ accurate within 10^{-6}

3. Explain how you could have used L_n and R_n in #2.