

Let $I = \int_{-2\pi/3}^{\pi/4} \sin(x^2) \, dx$.

1. Find n so that L_n approximates I within 0.001 of its actual value.
2. Find n so that T_n approximates I within 0.001 of its actual value.
3. Find n so that M_n approximates I within 0.001 of its actual value.
4. Which would you rather do?