

Let  $I = \int_5^{10} \cos\left(\frac{x^2}{3}\right) + x \, dx$

1. Calculate  $L_{1000}$  and  $T_{1000}$ .
2. How close are these to the actual value of  $I$ ?
3. Find a value of  $n$  so that  $L_n$  approximates  $I$  accurate within 0.01.