1. Consider $\int_{2.2}^{2.8} \sin(3x) \, dx$ and the two approximations LHS(25) and MID(25) of this integral. Use appropriate graphs on your calculator to estimate $K_1$ and $K_2$ to just two correct digits in the following:

1A: What is value of $K_1$ you should use in “theorem 3” to find an error bound for LHS(25)?

1B: What is that error bound in (1A)? (to five digits)? Show the formula you use in your work.

1C: What is value of $K_2$ you should use in that same theorem to find an error bound for MID(25)?

1D: What is that error bound in (1C)? Again, show the formula as part of your work.

2. Set up the integral which represents the arc length of $\cos(1/x)$ on the interval $[0.5, 1]$. (You do not have to evaluate it).