

Submit your Jupyter notebook with the answers to gradescope by 10:50am.

Consider $\int_0^{\pi/2} \cos(x) dx$.

1. Apply the composite trapezoidal rule to approximate this integral, using 1, 2, 4, and 8 subintervals of $[0, \pi/2]$.
2. Extrapolate to improve the approximations.
3. How many decimal places are correct in your extrapolations? Justify your answer.