PEP542 Homework
Spring 2025

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- There could be typos, please let me know if you find any issues.
- Do not copy solutions from Google or other online resources. It is very easy to tell whether the solution is original work or not.
- You are encouraged to discuss the problems with the other students.
- Please scan your solutions (make sure that the solution is recognizable) and upload the PDF file to Canvas.
- Late homework will not be counted in the final grade.
- Each student is granted one late-homework exemption, provided the homework is submitted within five days of the deadline. Please use it wisely.

Homework 5 (Due noon, Mar 10)

1. Consider a system consisting of two point charges, q, separated by a distance d. (a) Determine the electrostatic potential at a point located a distance z above the midpoint of the two charges. (b) Compute the corresponding electric field using the relation $\vec{E} = -\nabla V$.
2. Determine the capacitance per unit length of a coaxial cable consisting of two concentric cylindrical conductors with radii a and b ($a < b$).