1 Potential from a Finite Disk

None

In this problem, in all cases, you are expected to evaluate any integrals in your answers.

(a) Starting with the integral expression for the electrostatic potential due to a ring of charge, find the value of the potential everywhere along the axis of symmetry.

(b) Find the electrostatic potential everywhere along the axis of symmetry due to a finite disk of charge with uniform (surface) charge density σ.

(c) Find two nonzero terms in a series expansion of your answer to part (b) for the value of the potential very far away from the disk. [Your final answer should have 2 non-zero terms]