

The Electrostatic Field Due to a Ring of Charge

- Find the electric field everywhere in space due to a charged ring with radius R and total charge Q .
- Evaluate your expression for the special case that \vec{r} is on the z -axis.
- Find a series expansion for the electric field at these special locations:
 - (a) Near the center of the ring, in the plane of the ring;
 - (b) Near the center of the ring, on the axis of the ring;
 - (c) Far from the ring on the axis of symmetry;
 - (d) Far from the ring, in the plane of the ring;