Small Group Activity

Consider a very thin ring of charge with constant charge density, and total charge Q. The ring has radius R and is rotating about its axis with period T.

For all groups: Create an integral expression for the vector potential caused by this ring everywhere in space. The expression should be complete enough to put into Maple or a similar mathematics package.

All groups do at least one of the following:

- Approximate this vector potential near the center of the ring, in the plane of the ring.

- Approximate this vector potential near the center of the ring, along the z-axis.

- Approximate this vector potential far from the ring, in the plane of the ring.

- Approximate this vector potential far from the ring, along the z-axis.

If you finish your situation with time to spare, pick one of the others and solve it as well.