## [lex3] Electric field of a charged spherical shell

Calculate the electric field of a thin spherical shell of radius $R$ with charge $Q$ uniformly spread across its surface. Place the sphere with its center at the origin of the coordinate system. Pick a field point on the $z$-axis (inside or outside). Divide the spherical surface into thin rings parallel to the $xy$-plane. Use the result of [lex2] for the electric field generated by such rings. Then add up the contributions from all rings via integration.

**Solution:**