Electric field:

$$ec{E} = rac{1}{4\pi\epsilon} \iiint_V rac{dq}{\left|ec{R} - ec{R}_i
ight|^3} (ec{R} - ec{R}_i)$$

With a line charge:

$$dq=
ho_0\,dl$$

With a sheet charge:

$$dq=
ho_S\,dS$$

Total charge on a surface:

$$q_{total} = \iint
ho_s dS$$

Cartesian:

$$dS = dxdy$$

Cylindrical:

$$dS = rdrd\theta$$

Spherical:

$$dS =
ho^2 sin heta \, d heta \, d\phi \, d
ho$$