dependent seismic, gravity, magnetic, and other geological data increasingly are becoming available for improving our understanding of the geological structure and evolution of Earth, using fossil energy exploration and CO₂ sequestration efforts as well as for enhancing geothermal-energy exploration. In assessing these growing data sets, there is a great need for developing methods to compute regional and local thermal fields from geologic models in spherical as well as Cartesian coordinates. We employ the utility of the classical Gauss-Legendre quadrature formulation for numerically modeling the thermal effects (I) potential and fault of the spherical point for heat productivity in contrast to analogous current and thermal conductivity. As an application, we investigate the potential (T) and heat flow distribution over a significant area of RTI observations and heat flux estimates in Ohio.