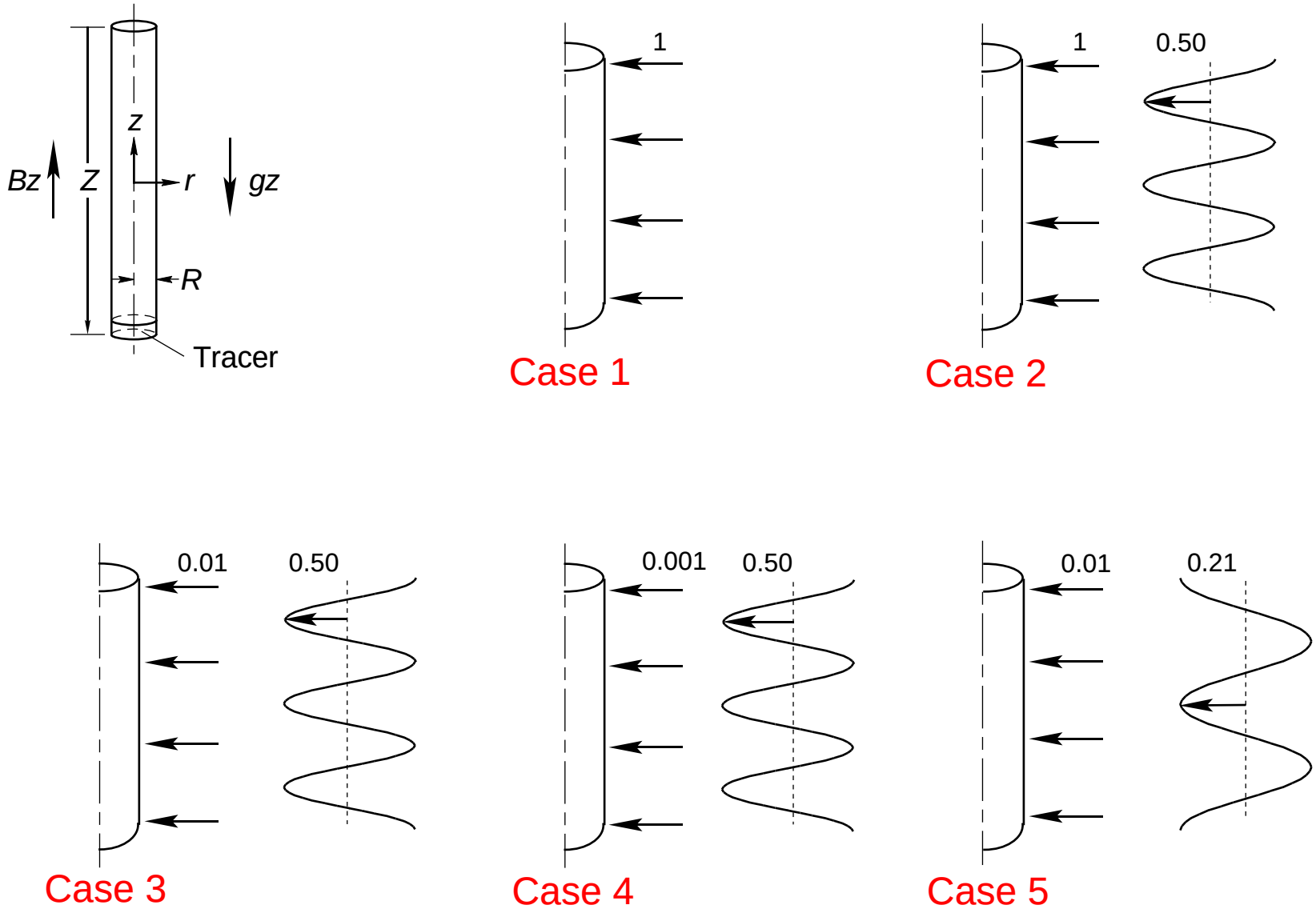Model Geometry and Imposed Thermal Profiles