Modelling 3: Extension

PT14, Week 6

The abundances of $^{238}\mathrm{U}$ and $^{235}\mathrm{U}$ are in the ratio of 140:1. Equal amounts of each isotope existed in the Earth's crust at its formation. Estimate the age of the earth. The half-lives are: $^{238}\mathrm{U}\colon4.5\times10^9$ years, $^{235}\mathrm{U}\colon7.1\times10^8$ years.