

Practice in rate calculations Homework 1

Name _____

The average surface temperature of the Earth is 10°C . The temperature in diamond mines that are 3km into the interior are $\sim 75^{\circ}\text{C}$. Calculate the shallow earth geothermal gradient. Show your work

2. Take the answer to 1. Extrapolate this temperature to 100 km depth; what would the temperature be at this depth? Show your work.

3. We know (from measurement of rock properties) that the Earth's temperature at 100 km is $\sim 1200^{\circ}$. If the temp of the Earth at 3km depth is 75° , calculate what the deeper earth geothermal gradient must be.