**THE STRUCTURE OF THE EARTH**

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| **Layer of the Earth** | **Estimated**  **Thickness**  **(kilometres)** | **State** | **Estimated**  **Temperature**  **(oC)** |
| Crust | 10 to 70 | Solid and rigid | 25 |
| Mantle | 2900 | Liquid | 1000 to 3500 |
| Outer Core | 2300 | Liquid | 4000-6000 |
| Inner Core | 2500 (radius) | Solid | 5000-6000 |

*Refer to the information above to answer the questions.*

1. The crust on which we stand varies in thickness from 8 km to 64 km. Would the crust be thickest under continents (such as Australia and Europe) or under the oceans? Why?

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1. The continents are situated on crustal plates that can move. What feature of the mantle allows movement of the Earth’s crust to occur?

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1. Compare and contrast the Continental Crust and Oceanic Crust by answering the following

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| Continental crust | Oceanic crust |
| Thickness …………..km | Thickness …………km |
| Dense / Buoyant **(Please circle)** | Dense /Buoyant **(Please circle)** |
| Young /old **(Please circle)** | Young/old **(Please circle)** |

1. What is the mantle composed of?
2. Name two elements that are found in the outer core.
3. The table above shows the depths and temperatures recorded in a mine shaft.

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| **Depth (km)** | **Temperature (oC)** |
| 0 | 20 |
| 1 | 51 |
| 2 | 82 |
| 3 | 112 |
| 4 | 142 |
| 5 | 171 |
| 6 | 201 |
| 7 | 230 |

(a) (i) Plot the data points on the graph paper. Make the x axis (horizontal) depth, going from 0km to 20 km. On the y axis (vertical) start at zero and go to 10000C.

(ii) Draw a **line of best fit** for the data.

(iii) Extrapolate your trend line (continue beyond your data, best guess) all the way out to the 20 km depth.

(b) Use the line of best fit to predict the temperature at: 8 km depth \_\_\_\_\_\_\_\_   
 and 20 km depth \_\_\_\_\_\_\_\_.

(c) The deepest mine is less than 10 kilometres deep. How do you think geologists estimate the thickness and temperature of the layers of the earth? Have your best guess!

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