**6.1B HOMEWORK - PROPERTIES OF RADIATION AND RADIOACTIVE ISOTOPES**

1. **Complete the following table by stating what effect the following barriers will have on each type of radiation; answer either “no effect”, “will reduce intensity” or “will completely stop”**

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| --- | --- | --- | --- |
| Barrier | α-particles | β-particles | γ-rays |
| 10 cm of air |  |  |  |
| a thin sheet of paper |  |  |  |
| a thin sheet of aluminium |  |  |  |
| a thick layer of lead |  |  |  |

**2.  Dangers of radiation**

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| --- | --- | --- |
| (a) | State the two ways in which radiation can be harmful |  |
| (b) | Explain why gamma radiation is generally considered more dangerous than alpha or beta radiation |  |
| (c) | In what circumstances would alpha or beta radiation be considered very dangerous? |  |

**3. Half-life calculations**

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| **3.** | The half-life of carbon-14 is 5730 years. | |
| (a) | If a fossil is approximately 23,000 years old, approximately what percentage of its carbon-14 should still be present? |
|  |
| (b) | A skeleton was discovered in a pyramid. It’s carbon-14 content was 25% of the carbon-14 found in living tissue. How old is the skeleton? |
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