**6.1 HONORS CLASS WORKSHEET**

**1. Nuclear symbols - a review**

**Use this template for nuclear symbols and equations:**  ⟶ +

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| (a) | Define the term “atomic number”. |  |
| (b) | Define the term “mass number”. |  |
| (c) | Define the term “isotopes”. |  |
| (d) | Write the symbol for an atom containing  90 protons and 131 neutrons |  |
| (e) | Give the name of the atom in (d) |  |
| (f) | Deduce the number of protons and neutrons in |  |

**2. Principles of nuclear stability and radioactivity**

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| --- | --- | --- |
| (a) | Describe an alpha particle and give its chemical symbol. |  |
| (a) | Why do some nuclei release alpha particles? |  |
| (c) | Describe a beta particle and give its chemical symbol. |  |
| (d) | Describe what happens inside a nucleus as a beta particle is emitted. |  |
| (e) | Why do some nuclei release beta particles? |  |
| (f) | What is gamma radiation? Why is gamma radiation sometimes released alongside alpha and beta particles? |  |