Radioactivity

|  |  |
| --- | --- |
| **Type of Radioactive Decay** | **Symbol** |
|  | 42 He or 42α |
| Beta decay |  |
| Gamma decay |  |
|  | 01e |

Electron capture is when a proton reacts with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to make a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Balancing Reactions

22688 Ra 🡪

23992U 🡪

Nuclear Stability

The only stable isotopes with more protons than neutrons are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Isotopes with greater than \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are unstable.

Light isotopes are stable with a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ ratio of neutrons:protons.

Heavy isotopes are stable with a ratio of neutrons:protons that is \_\_\_\_\_\_\_\_\_\_\_\_\_ than 1:1

Predicting Products

Isotopes bigger than Bi often release \_\_\_\_\_\_\_\_\_\_\_\_\_ particles to decrease the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Isotopes above the band of stability often release \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to decrease the neutron:proton ratio.

Isotopes below the band of stability often us \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to increase the neutron:prton ratio.

Complete the Reactions

24194 Pu 🡪 24195 Am +

4019 K 🡪 + 01 e

🡪 23490 Al + 42 He