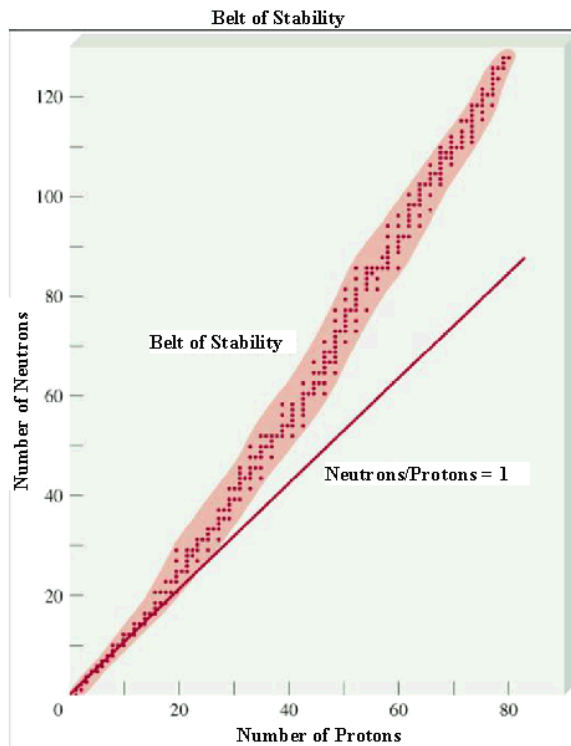


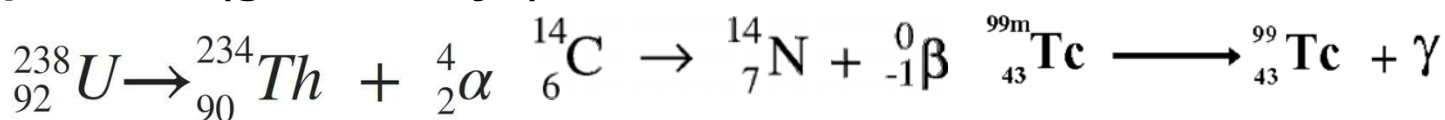
# STATION 17

## NUCLEAR STABILITY AND RADIOACTIVITY

As the chart to the right illustrates, only limited combinations (dots in pink region) of protons and neutrons result in stable nuclei. Nuclei with other combinations are radioactive with half lives that range from microseconds to trillions of years.



Three of the common types of radioactive decay include emission of a helium nucleus ( $\alpha$  particle), an electron (a  $\beta$  particle) or high energy photons (gamma rays).



This station has several household items that will be tested for radioactivity. While exposure to radioactivity should be minimized, small amounts are not significantly harmful. The Geiger counter adjacent to the turntable will react audibly to radioactive sources with a clicking sound.

Which of the items on the turntable are radioactive?

Fiesta ware



radium watch dial



lantern mantle



uranium powder and pellet

