

The mass and charge of a Proton =

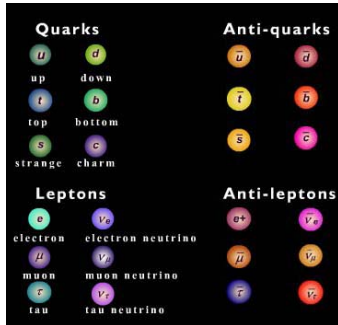
The mass and charge of an Electron =

The mass and charge of a Neutron =

Describe what an ISOTOPE is:

Proton number  $Z =$

Nucleon number  $A =$

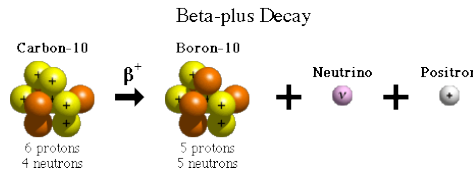
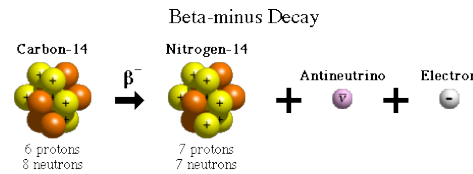


List the charge, rest energy and mass of two particle - antiparticle pairs:

To convert MeV to J we:

Draw a diagram to explain pair production and annihilation:

### Nuclear Decay



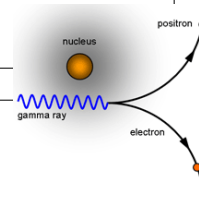
Nuclear Equations:

Alpha Decay =

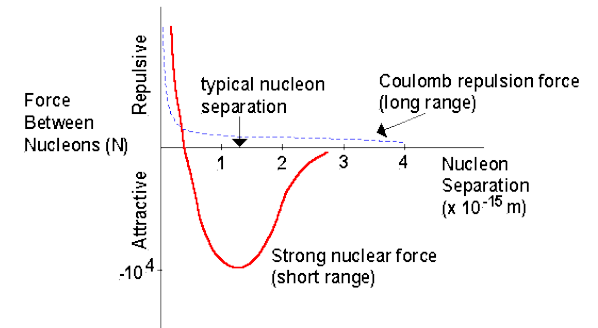
Beta - Decay =

What does each letter stand for?

$$E = hf = \frac{hc}{\lambda}$$



### Stable and Unstable Nuclei



Explain the strong nuclear force:

Feynman Diagrams:

Beta-plus:

Beta-minus:

Proton Capture:

Neutrinos interacting: