

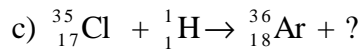
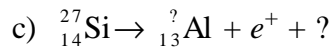
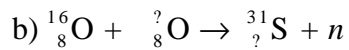
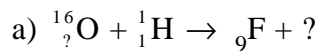
## Astronomy 45

### Introduction to Astrophysics

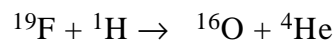
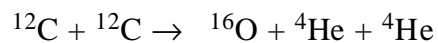
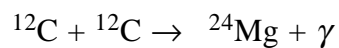
Problem Set 9 Due Monday November 26 , 2001

1. If  ${}^A_Z\text{X}$  represents a nucleus of atomic mass number  $A$  and nuclear charge  $Z$ ,

complete the reactions

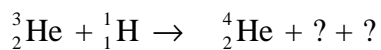


2. Calculate the energies in MeV released and absorbed in the following reactions



The masses of  ${}^{12}\text{C}$ ,  ${}^{24}\text{Mg}$ ,  ${}^{16}\text{O}$ ,  ${}^4\text{He}$ ,  ${}^{19}\text{F}$  and  ${}^1\text{H}$  are respectively 12.0000, 23.9850, 15.9949, 4.0026, 18.9984 and 1.0078 amu.

3. Complete



and explain your choices.