1 What would be the approximate mass that would be formed if 1 J of energy were converted completely to matter? [c = 3.0 x 108 m/s]

A ~1 x 10-15 kg
B ~1 x 10-16 kg
C ~1 x 10-17 kg
D None of the above

2 mp = 1.00728 u; mn = 1.00866 u; me is 5.5 x 10-4 u. When two H-1 nuclei undergo fusion, a deuteron, H-2, a positron, and a neutrino are formed. The mass of H-2 is 2.01356 u. What can you predict about this nuclear fusion reaction?

A It is exothermic.
B It is endothermic.
C It is energetically neutral.
D Cannot tell without more information.

3 Compared to the mass of a molecule of molecular hydrogen, the combined mass of two atoms of hydrogen must be ...

A smaller
B the same
C greater

4 Compared to the mass of H-2 (a deuteron), the combined mass of one proton and one neutron must be ...

A smaller
B the same
C greater