YOUR NAME:_____

A box has a gas of helium atoms (mass-4) and hydrogen molecules (mass-2) in equal number densities. Particles are radiated through a small hole in the box for a short time. The ratio of emitted He-4 atoms per emitted H-2 molecules is:

a) 1/4

b) 1/2

c) $1/\sqrt{2}$

d) 1 to 1

e) $\sqrt{2}$

f) 2

g) 4

Assume all phase space densities are sufficiently low to warrant Boltzmann statistics (not Bose or Fermi).