Module 5 Practice Questions ANSWERS

Find the mass of each:

1. Mass of 1 boron atom = 10.8 amu
2. Mass of 6 boron atoms = 64.8 amu
3. Mass of 1 water molecule = 18.02 amu
4. Mass of 35 water molecules = 630.7 amu

Find the mass of each in amu, then convert your answer to grams.

5. Mass of 1 chromium atom = 52 amu = 8.64×10^{-23} grams
6. Mass of 1 C_2H_2 molecule = 26.02 amu = 4.32×10^{-23} grams
7. Mass of 16 C_2H_2 molecules = 416.32 amu = 6.92×10^{-22} grams

Find the mass of each quantity of a substance.

1. Mass of 1 mole of silicon = 28.1 grams
2. Mass of 67.1 moles of helium = 268.4 grams
3. Mass of 1 mole of ethylene (C_2H_4) = 28.04 grams
4. Mass of 5 moles of baking soda ($NaHCO_3$) = 420.05 grams

Find the number of moles, then find the mass of the substance.

5. 9.5×10^{40} atoms of iron = 1.58×10^{17} moles = 8.81×10^{18} grams
6. 4.26×10^{19} molecules of water = 7.08×10^{-5} moles = 0.001275 grams

Find the number of moles of each substance.

7. 50 grams of gold = 0.254 moles of gold atoms
8. 82.5 grams of magnesium = 3.395 moles of magnesium
9. 100 grams of CO_2 = 2.272 moles of CO_2 molecules
10. 72 grams of NH_3 (ammonia) = 4.227 moles of NH_3 molecules