2. Sodium has an atomic weight of 23, and there are 46 grams of sodium supplied, so the ratio of mass of reactant to atomic weight for sodium is 46 / 23 = 2 . The chemical formula for salt, NaCl, requires an equal number of sodium and chlorine atoms for each molecule, so we must also have a ratio of atomic mass to atomic weight for chlorine of 2. There were 71 grams of chlorine supplied, so chlorine must have an atomic weight of 71 / 2 = 35.5.