Determining the Atomic Mass of Elements in a Compound Using Matrices

Chemistry Background: The mass of a compound is determined by adding the masses of the elements in the compound together. For example, H_2O has a mass of 18 because hydrogen has a mass of 1, since there are 2 hydrogens you multiply 2 x 1 and then add to the mass of oxygen which is 16. What is the mass of N_2O_5? 2 x 14 (mass of nitrogen) + 5 x 16 (mass of oxygen) = 108

Directions: Set up a matrix to determine the mass of the unknown element in each set of compounds.

1. Determine the atomic mass of element X. Then using your periodic table to identity it.

X_2O	O: 16	X: ?	Compound: 62
XCl	Cl: 35	X: ?	Compound: 58
X_3N_2	N: 14	X: ?	Compound: 97

2. Determine the atomic mass of element T. Then use your periodic table to identify it.

X_2O_3	O: 16	X: ?	Compound: 158
XCl_2	Cl: 35	X: ?	Compound: 125
XN	N: 14	X: ?	Compound: 69

3. Determine the atomic mass of element T. Then use your periodic table to identify it.

MgX	Mg: 24	X: ?	Compound: 40
Fe_2X_3	Fe: 55	X: ?	Compound: 158
NX_2	N: 14	X: ?	Compound: 46