Relative Formula Mass

Answer the following questions.

1. Circle the correct word to complete the sentence.
   a. Relative atomic mass can also be written as **M_r** / **A_r**
   b. Relative formula mass can also be written as **M_r** / **A_r**
   c. The relative atomic mass of an **element** / **compound** can be found using the Periodic Table
   d. The relative atomic mass can be found next to the chemical symbol, on a Periodic Table, and it is always the **bigger** / **smaller** / **top** / **bottom** number.

2. State the relative atomic mass (Ar) for the following elements:
   a. Nitrogen **14**
   b. Bromine **80**
   c. Neon **20**
   d. Thallium **204**
   e. Vanadium **51**
   f. Helium **4**
   g. Hydrogen **1**
   h. Oxygen **16**
   i. Carbon **12**
   j. Osmium **190**
   k. Gold **197**
   l. Copper **63.5**

3. Calculate the relative formula mass (M_r) of each of the following compounds.

   Show your working.

   a. Cl_2 **71**
   b. H_2 **2**
   c. H_2O **18**
   d. CO_2 **44**
   e. HCl **36.5**
   f. $CuSO_4$ **159.5**
   g. NaOH **40**
   h. Al_2O_3 **102**
   i. $Zn(OH)_2$ **99**
   j. $Mg(NO_3)_2$ **148**
   k. $Ca(HCO_3)_2$ **162**
   l. $(NH_4)_2SO_4$ **132**

4. Prove that the M_r of products = M_r of reactants using the following equation.

   (Ar: Mg = 24; Cu = 63.5; S = 32; O = 16)

   $$Mg + CuSO_4 \rightarrow MgSO_4 + Cu$$

   24 + 159.5 = 120 + 63.5

   both sides = 183.5

5. A metal oxide has the formula MO, where M is the chemical formula for the metal and O is oxygen.

   The relative formula mass for this compound is 40.

   What is the metal?

   A_r of M + Mr of O = 40

   A_r of M + 16 = 40

   A_r of M = 24

   M = Magnesium.