Balancing Equations

1. a) Why is the following equation not balanced?

   $N_2 + H_2 \longrightarrow NH_3$

   b) The following is an attempt to balance the above equation. What is wrong with the way that the equation is balanced?

   $N_2 + H_3 \longrightarrow N_2H_3$

2. Balance the following equations by rewriting them in the space provided.

   a) $Na + Cl_2 \longrightarrow NaCl$ _____

   b) $K + O_2 \longrightarrow K_2O$ _____

   c) $H_2 + O_2 \longrightarrow H_2O$ _____

   d) $H_2 + Cl_2 \longrightarrow HCl$ _____

   e) $N_2 + H_2 \longrightarrow NH_3$ _____

   f) $CO + O_2 \longrightarrow CO_2$ _____

   g) $Al + Br_2 \longrightarrow AlBr_3$ _____

   h) $N_2H_4 + O_2 \longrightarrow H_2O + N_2$ _____

   i) $CH_4 + O_2 \longrightarrow CO_2 + H_2O$ _____

   j) $Na + O_2 \longrightarrow NaO_2$ _____

3. For each of the following write the correct skeleton equation, and then balance it to form a chemical equation.

   a) copper (II) oxide + hydrogen ⟶ copper + water

   Skeleton equation _____

   Chemical equation _____

   b) lead (II) nitrate + potassium iodide ⟶ lead (II) iodide + potassium nitrate

   Skeleton equation _____

   Chemical equation _____

   c) calcium + water ⟶ calcium hydroxide + hydrogen gas

   Skeleton equation _____

   Chemical equation _____

   d) lead (II) sulfide + oxygen ⟶ lead + sulfur dioxide

   Skeleton equation _____

   Chemical equation _____