Answer the following questions. For **calculations SHOW WORK to receive credit** and include units on the answer

Standard 1:

1. Define the mole. Define molar mass.
2. Find the molar mass of Pb3(PO4)2
3. Find mol for 5.65 x 1024 formula units NaOH
4. Find molecules for 2.50 mol HCl
5. Find grams for 4.31 mol Ca3(PO4)2
6. Find litersfor 9.19 mol Ar

1. Find mol for 433.0 L H2
2. Find grams for 7.31 x 1022 formula units KI
3. Find L for 45.7 g H2O
4. Find mass for 67.0 L CH4
5. Find volume for 4.28 x 1024 molecules PH3

Standard 2:

1. What happens during a chemical reaction?
2. Answer the following questions for: 2 AgNO3 (aq) + Na2S (aq) → 2 NaNO3 (aq) + Ag2S (s)
   1. What are the products and reactants?
   2. What does the → mean?
   3. What would you call the 2 in 2 AgNO3?
3. Why do chemical equations need to be balanced?
4. A student performed and experiment for the following reaction: (**remember to show work to get credit**)

AgNO3 (aq) + HCl (aq) → HNO3 (aq) + AgCl (s)

42.5 g 9.1 g 15.8 g

How many grams of AgCl would be produced?

1. Why is it wrong to change subscripts when balancing equations?

Standard 3:

1. What determines whether one metal will replace another metal from a compound in a single-replacement reaction?
2. Fill in the following chart with how you can identify the 5 types of chemical reactions

|  |  |
| --- | --- |
| Reaction Type | Equation |
| Synthesis/combination |  |
| Decomposition |  |
| Single Replacement |  |
| Double Replacement |  |
| Combustion |  |

1. Write a complete balanced equation for the following. Identify type of reaction.
   1. \_\_\_\_Na3P + \_\_\_\_CaCl2 → Type:
   2. \_\_\_\_AlBr3 +\_\_\_\_Mg → Type:
   3. \_\_\_\_C8H12 + \_\_\_\_O2 → Type:

Standard 2 and 3 Mixed Practice:

1. Balance the following reactions and indicate the type of chemical reaction.
   1. \_\_\_\_Ru2O3🡪 \_\_\_\_Ru + \_\_\_\_O2 Type:
   2. \_\_\_\_NH3+ \_\_\_\_ H2SO4 🡪 \_\_\_\_ (NH4)2SO4 Type:
   3. \_\_\_\_ C5H10O + \_\_\_\_O2 🡪 \_\_\_\_CO2 + \_\_\_\_H2O Type:
   4. \_\_\_\_Pb + \_\_\_\_H3PO4 🡪 \_\_\_\_H2 + \_\_\_\_ Pb3(PO4)2  Type:
   5. \_\_\_\_ Li3N + \_\_\_\_NH4NO3 🡪 \_\_\_\_LiNO3 + \_\_\_ (NH4)3N Type: