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| **Mole Ratio** | Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**Balance the following and solve the problem. Show all work in dimensional analysis form.**

1. \_\_\_\_\_C3H8 + \_\_\_\_\_O2 → \_\_\_\_\_H2O + \_\_\_\_\_CO2

How many moles of water will be produced if 1.2 mol of oxygen reacts with excess C3H8?

1. \_\_\_\_\_K + \_\_\_\_\_HgCl2 → \_\_\_\_\_Hg + \_\_\_\_\_KCl

How many moles of potassium are needed to react with .633 moles of HgCl2?

1. \_\_\_\_\_Hf + \_\_\_\_\_N2 →\_\_\_\_\_Hf3N4

How many moles of hafnium nitride are produced when 2.00 moles of nitrogen reacts with excess hafnium?

1. \_\_\_\_\_Pb(NO3)4 + \_\_\_\_\_NaI → \_\_\_\_\_PbI4 + \_\_\_\_\_NaNO3

How many moles of PbI4 are produced when 11.7 moles of sodium nitrate are produced?

1. \_\_\_\_\_Cl2 + \_\_\_\_\_KI → \_\_\_\_\_KCl + \_\_\_\_\_I2

How many moles of chlorine are need to produce .4789 moles of iodine?

1. \_\_\_\_\_Ba(CN)2 + \_\_\_\_\_H2SO4 → \_\_\_\_\_BaSO4 + \_\_\_\_\_HCN

How many moles of barium cyanide are need to produce 12.0 moles of barium sulfate?

1. Aluminum chloride reacts with potassium metal. If 3.25 mol potassium metal reacted, how many moles of each product were formed?
2. Sodium metal reacts with oxygen gas. 0.600 mol of oxygen gas was used up. How many moles of sodium metal reacted? How many moles of the product were formed?
3. Nitrogen gas and hydrogen gas react together. If 9.43 mol of the product was formed, how many moles of nitrogen gas and hydrogen gas were used up?
4. 7.11 mol of H2SO4 reacts with sodium hydroxide. How many moles of the base are necessary for this reaction?