Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_

**Stoichiometry Mole to Mole Practice**

Directions: Use the equations below to answer the following mole to mole questions. You MUST show your work with units and chemical formulas to receive full credit.

**2 NaClO3 ---> 2 NaCl + 3 O2**

1. If you have 4.50 moles of NaClO3 how many moles of O2 will you produce?
2. If you produced 3.45 moles NaCl how many moles of NaClO3 did you decompose?
3. How many moles of oxygen are produced with 21.2 moles of NaClO3 is decomposed?

**2 C4H10 + 13 O2 ---> 8 CO2 + 10 H2O**

1. You have 3.45 moles of C4H10 how many moles of carbon dioxide will you produce?
2. You have 3.45 moles of C4H10 how many moles of water will you produce?
3. If you produced 25.25 mol of carbon dioxide how many moles of oxygen you use?
4. How many moles of water are produced when 12.28 moles of C4H10 is consumed with excess oxygen?

**2 KClO3 ---> 2 KCl + 3 O2**

1. How many moles of KClO3 are decomposed if you produce 16.25 moles of oxygen?
2. How many moles of KCl are produced with 16.25 moles of oxygen?
3. How many moles of KClO3 are decomposed if you produce 6.95 moles of KCl?

**4 NH3 (g) + 5 O2 (g) ---> 4 NO (g) + 6 H2O (l)**

1. If you react 9.25 mol of ammonia (NH3) with excess oxygen how many moles of water are produced?
2. If you react 4.78 mol of oxygen with excess ammonia (NH3) how many moles of NO are produced?
3. You produce 28.14 moles of water how many moles of ammonia did you consume?
4. 12.39 moles of oxygen are consumed to produce how many moles of water?

Final answers rounded to the correct number of significant figures.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. 6.75 mol O2
 | 1. 3.45 mol NaCl
 | 1. 31.8 mol O2
 | 1. 13.8 mol CO2
 | 1. 17.3 mol H2O
 |
| 1. 41.0 mol O2
 | 1. 61.4 mol H2O
 | 1. 10.8 mol KClO3
 | 1. 10.8 mol KCl
 | 1. 6.95 mol KClO3
 |
| 1. 13.9 mol H2O
 | 1. 3.82 mol H2O
 | 1. 18.76 mol NH3
 | 1. 14.87 mol H2O
 |  |