Unit 6D Practice Problems II
Mole to Mole and Mole to Mass Calculations

Name:

Date:

The first step in the industrial manufacture of nitric acid involves the catalytic oxidation of ammonia according to the following BALANCED equation.

$$4NH_3\ (g) + 5O_2\ (g) \rightarrow 4NO\ (g) + 6H_2O\ (g)$$

1. **How many moles of NO are formed if 824 g of NH_3 react?**

2. **How many grams of water are formed if 2.5 moles of ammonia are oxidized?**

3. **How many moles of oxygen are needed to react with 4.6 moles of ammonia?**

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Mercury (II) oxide decomposes into mercury and oxygen gas according to the following UNBALANCED equation.

$$HgO \rightarrow Hg + O_2$$

1. How many moles of mercury (II) oxide are needed to produce 125 g of oxygen?

2. How many moles of mercury are produced if 24.5 moles of mercury (II) oxide decompose?

3. How many grams of oxygen will be produced if 2.3 moles of mercury are produced?

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