

Honors Chemistry: Stoichiometry 1 Problem Set- Introduction to Stoichiometry

1. Carbon disulfide is an important industrial solvent. It is prepared by the reaction of carbon with sulfur dioxide. The other product in this reaction is carbon monoxide.

- How many moles of carbon disulfide form when 6.3 moles of carbon reacts?
- How many moles of carbon are needed to react with 7.24 moles of sulfur dioxide?

2. Silver nitrate reacts with calcium.

- If 35.3 moles of silver nitrate are reacted, how many moles of silver are produced?

3. In a synthesis reaction, barium oxide reacts with carbon dioxide to make barium carbonate.

- If 23.4 moles of barium oxide react, how many liters of carbon dioxide are required at STP?

4. Car batteries are called lead storage batteries because of their use of large quantities of lead. These batteries utilize the following equation:



- If 34.3-g of PbO_2 reacts, how many grams of water will be formed?
- If 34.3-g of PbO_2 reacts, how many grams of PbSO_4 will be formed?

5. Ammonia, (NH_3), is produced by reacting nitrogen gas and hydrogen gas.

- If 34.3-L of nitrogen is reacted with hydrogen, how many liters at STP of ammonia will be formed?

6. In a reaction, 32.5-g of zinc sulfate reacts with barium chloride to form how many grams of barium sulfate?

7. When sodium metal is added to water the resulting hydrogen gas can often explode. How many liters of hydrogen gas are produced when a 41.2-g piece of sodium is dropped into water?

8. Propane is a gas that is often used for backyard grills. How many liters of CO_2 are produced when 54.9-L of propane (C_3H_8) is burned at STP?