

Name: _____

Period: _____

Seat#: _____

Directions:

- 1 dm³ = 1L
- Don't forget! You must show all work and units for conversions, gas laws, dimensional analysis, etc.
- Get an actual answer, including units! Box your answer!
- Some answers are provided at the end of the question. The answers are underlined.

1) Hydrogen sulfide occupies 2.782 cm³ at 26 °C and standard pressure. If the hydrogen sulfide reacts with MgCO₃, what mass of MgCO₃ is required to react with all the hydrogen sulfide? 0.956g MgCO₃

2) 3.27 moles of carbon dioxide are in a vessel of undetermined size at 106.3 KPa and 21.8 °C. What is the volume of the vessel? How many grams of propene (C₃H₆) would have to be combusted to produce that much CO₂? 75.4 dm³

3) If 1.39 g of carbon monoxide is reacted with oxygen, what volume of carbon dioxide is produced at 12.3 °C at 107.4KPa? What volume of carbon dioxide would be produced? 1.09 dm³

Dougherty Valley HS Chemistry
Gas Laws – More Gas Stoichiometry

4) If 14.4 dm³ of ethane is combusted at 102.7 °C and 99.3KPa, how many grams of water will be produced? 24.8 g H₂O

5) What volume of C₈H₁₈ is required to fill a 1.4 dm³ airbag with CO₂ if the wrecker truck burns octane at STP? (Exhaust fumes are used to fill airbags to upright flipped tractor trailers.) 0.175 dm³ C₈H₁₈

6) A scuba diver dives with a tank containing 5L of air. Twenty-two percent of the air is oxygen. If the diver produces 1.62 mol carbon dioxide for every 2.05 mol of oxygen he/she inhales, what is the volume (at STP) of carbon dioxide produced if 4.2 L of air are consumed at 202.6 KPa and 14.7 °C? 1.38 dm³ CO₂

7) If 34.6g of Zn are reacted with an excess of hydrochloric acid at standard pressure, what is the temperature of the hydrogen gas produced if it occupies a 2.00 dm³ container? 46.05 K