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| Define stoichiometry and explain why it is such a useful tool for chemists.  **Answer:** |
| Explain what a limiting reactant is.  **Answer:** |
| A chemist experiments with the following reaction:  14HCl + K2Cr2O7 →2KCl + 2CrCl3 + 3Cl2 + 7H2O  If the chemist adds 16 moles of HCl to 1 mole of K2Cr2O7, what is the limiting reactant?  **Answer:** |
| State Gay-Lussac's Law and explain how it is used.  **Answer:** |
| A chemist wants to perform the following reaction:  CaCO3 (s) + 2HCl (g) →CaCl2 (aq) + CO2 (g) + H2O (l)  Which substances can she use Gay-Lussac's Law to relate to one another?  **Answer:** |
| When 2.33 moles of C3H8 burn in excess oxygen, how many moles of CO2 will be formed? Assume this is complete combustion  **Answer:** |
| Silver tarnishes when exposed to oxygen and dihydrogen monosulfide. The chemical reaction is as follows:  4Ag (s) + 2H2S (g) + 02 →2Ag2S (s) + 2H20 (l)  silver tarnish  Every household has some H2S in the air (it smells like rotting eggs), but there is usually only a small quantity. Thus, H2S is almost always the limiting reactant in this reaction. If a silver spoon has 0.0023 moles of tarnish on it, how many moles of H2S was it exposed to?  **Answer:** |
| Freon, a very useful refrigerant, is produced in the following reaction:  3CCl4 (g) + 2SbF3 (s) →3CCl2F2 (g) + 2SbCl3 (s)  Freon  If a chemist wants to make 1.5 x 104 moles of Freonusing excess carbon tetrachloride, how many moles of antimony triflouride will the chemist need?  **Answer:** |
| In the reaction from P3, suppose the chemist wanted to make 100.0 liters of Freonusing excess antimony triflouride. How many liters of carbon tetrachloride would the chemist need?  **Answer:** |