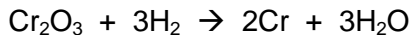


Unit 4 Benchmark #3 – Stoichiometry – PRACTICE

Each question will be worth 4 points. You must show all of your work.

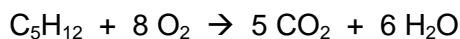
Put your answer in the space provided! No Work = No Credit!

1. A chemist uses hot hydrogen gas to convert chromium(III) oxide to pure chromium. How many moles of hydrogen are needed to convert 5 moles of chromium(III) oxide, Cr_2O_3 ?



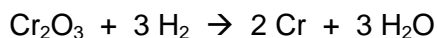
_____ moles

2. How many liters of oxygen, O_2 , are required for the complete combustion of $\frac{1}{2}$ mole of pentane, C_5H_{12} at standard conditions?



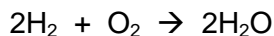
_____ liters

3. A chemist uses hot hydrogen gas to convert chromium(III) oxide to pure chromium. How many moles of hydrogen are needed to convert 76 grams of chromium(III) oxide, Cr_2O_3 ?



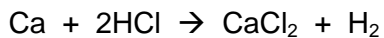
_____ moles

4. Hydrogen can react explosively with oxygen to form water. How many liters of hydrogen are required to combine with 16 grams of oxygen at standard conditions?



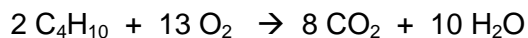
_____ liters

5. How many grams of calcium are required to free 4 moles of hydrogen gas from hydrochloric acid, HCl?



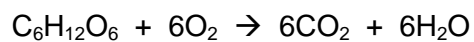
_____grams

6. Butane, C_4H_{10} burns in oxygen. How many liters of water vapor, H_2O , are produced by the combustion of 20 moles of butane at standard conditions?



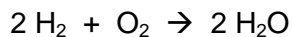
_____liters

7. How many liters of oxygen, at standard conditions, are needed to react with 90 grams of glucose, ($\text{C}_6\text{H}_{12}\text{O}_6$)?



_____liters

8. How many grams of oxygen are required to produce 9 grams of water at standard conditions?



_____grams