



# Chemistry

Name: \_\_\_\_\_

Section \_\_\_\_\_

MOLE TO MOLE

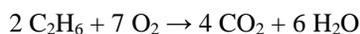
Date: \_\_\_\_\_

Solve the following mole to mole ratio problems using conversion factors from the balanced equations. Show all your work and unit cancellations.

1. Given the reaction  $2 \text{H}_2 + \text{O}_2 \rightarrow 2 \text{H}_2\text{O}$ , how many moles of oxygen must react if 32.7 moles of hydrogen react completely?

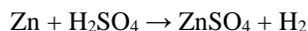
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2. If 23.8 moles of oxygen are consumed in the reaction below, how many moles of carbon dioxide are produced?



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3. How many moles of hydrogen are produced when 2.53 moles of zinc react according to the following reaction?

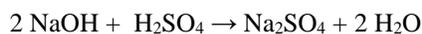


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4. Given the reaction  $2 \text{CO} + \text{O}_2 \rightarrow 2 \text{CO}_2$ , how many moles of carbon dioxide are produced if 75.1 moles of oxygen are burned completely?

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5. How many moles of water are produced if 2.93 moles of sodium sulfate are produced in the reaction below?

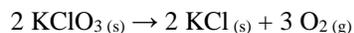


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6. If 14.2 moles of aluminum chloride are decomposed, how many moles of chlorine gas are produced? (Hint: write the balanced equation first.)

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7. How many moles of oxygen gas are produced if 5.16 moles of potassium chlorate decompose completely?



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8. How many moles of aluminum must react to produce when 0.594 moles of aluminum sulfide?

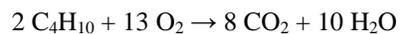


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9. Given the reaction  $\text{Fe}_2\text{O}_3 (\text{s}) + 3 \text{CO} (\text{g}) \rightarrow 2 \text{Fe} (\text{l}) + 3 \text{CO}_2 (\text{g})$ , how many moles of liquid iron are produced when 0.619 moles of carbon monoxide react completely?

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10. How many moles of oxygen are required for the complete combustion of 0.758 moles of butane,  $\text{C}_4\text{H}_{10}$ ?



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