

Conversions Practice

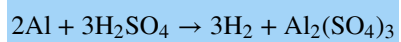
Name: _____

Date: _____

1. What is the mass in grams of 1.00 mole of O₂ gas?
A. 11.2 B. 16.0 C. 22.4 D. 32.0
2. What is the total number of moles in 80.0 grams of C₂H₅Cl (gram-formula mass = 64.5 grams/mole)?
3. Which quantity is equivalent to 39 grams of LiF?
A. 1.0 mole B. 2.0 moles
C. 0.50 mole D. 1.5 moles
4. What is the total number of moles contained in 115 grams of C₂H₅OH?
A. 1.00 B. 1.50 C. 3.00 D. 2.50
5. Show a correct numerical setup for calculating the number of moles of CO₂ (gram-formula mass = 44 g/mol) present in 11 grams of CO₂.
6. Approximately how many atoms are there in 3.0 moles of Al?
A. 6.0×10^{23} B. $2(6.0 \times 10^{23})$
C. $3(6.0 \times 10^{23})$ D. $4(6.0 \times 10^{23})$
7. The total number of sodium atoms in 46.0 grams of sodium is
A. 3.01×10^{23} B. 6.02×10^{23}
C. 12.0×10^{23} D. 24.0×10^{23}
8. What is the total mass of 3.01×10^{23} atoms of helium gas?
A. 8.00 g B. 2.00 g C. 3.50 g D. 4.00 g

9. Given the reaction:
$$2\text{NaOH} + \text{H}_2\text{SO}_4 \rightarrow \text{Na}_2\text{SO}_4 + 2\text{H}_2\text{O}$$
What is the total number of moles of NaOH needed to react completely with 2 moles of H₂SO₄?
A. 1 B. 2 C. 0.5 D. 4
10. Given the reaction:
$$2\text{Na} + 2\text{H}_2\text{O} \rightarrow 2\text{NaOH} + \text{H}_2$$
What is the total number of moles of hydrogen produced when 4 moles of sodium react completely?
A. 1 B. 2 C. 3 D. 4
11. Given the equation:
$$\text{Zn} + 2\text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2$$
How many moles of HCl would be required to produce a total of 2 moles of H₂?
A. 0.5 B. 2 C. 3 D. 4
12. Given the reaction: $\text{N}_2(\text{g}) + 3\text{H}_2(\text{g}) \rightleftharpoons 2\text{NH}_3(\text{g})$. What is the ratio of moles of H₂(g) consumed to moles of NH₃(g) produced?
A. 1:2 B. 2:3 C. 3:2 D. 6:6
13. Given the equation:
$$2\text{C}_4\text{H}_{10} + 13\text{O}_2 \rightarrow 8\text{CO}_2 + 10\text{H}_2\text{O}$$
How many moles of carbon dioxide are produced for each mole of butane consumed?
A. 1 B. 2 C. 8 D. 4

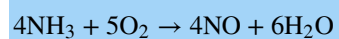
14. Given the reaction:



The total number of moles of H_2SO_4 needed to react completely with 5.0 moles of Al is

- A. 2.5 moles B. 5.0 moles
C. 7.5 moles D. 9.0 moles

15. Given the reaction:



What is the maximum number of moles of H_2O that can be produced when 2.0 moles of NH_3 are completely reacted?

- A. 1.0 B. 2.0 C. 3.0 D. 6.0

16. In the reaction $\text{N}_2 + 3\text{H}_2 \rightarrow 2\text{NH}_3$, how many grams of H_2 are needed to produce exactly 1 mole of ammonia?

- A. 1 g B. 2 g C. 3 g D. 4 g

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1.
Answer: D
2.
Answer: 1.24 mol
3.
Answer: D
4.
Answer: D
5.
Answer: $11 \text{ g} \times \frac{1 \text{ mole}}{44 \text{ g}}$
6.
Answer: C
7.
Answer: C
8.
Answer: B
9.
Answer: D
10.
Answer: B
11.
Answer: D
12.
Answer: C
13.
Answer: D
14.
Answer: C
15.
Answer: C
16.
Answer: C