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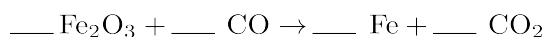
1. A balanced equation representing a chemical reaction can be written using

- A) chemical formulas and mass numbers
- B) chemical formulas and coefficients
- C) first ionization energies and mass numbers
- D) first ionization energies and coefficients

2. Which chemical equation is correctly balanced?

- A)  $\text{H}_2(\text{g}) + \text{O}_2(\text{g}) \rightarrow \text{H}_2\text{O}(\text{g})$
- B)  $\text{N}_2(\text{g}) + \text{H}_2(\text{g}) \rightarrow \text{NH}_3(\text{g})$
- C)  $2\text{NaCl}(\text{s}) \rightarrow \text{Na}(\text{s}) + \text{Cl}_2(\text{g})$
- D)  $2\text{KCl}(\text{s}) \rightarrow 2\text{K}(\text{s}) + \text{Cl}_2(\text{g})$

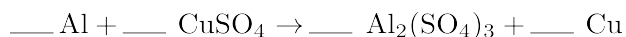
3. Given the unbalanced equation:



When the equation is correctly balanced using the *smallest* whole-number coefficients, what is the coefficient of CO?

- A) 1
- B) 2
- C) 3
- D) 4

4. Given the unbalanced equation:



When the equation is balanced using the *smallest* whole-number coefficients, what is the coefficient of Al?

- A) 1
- B) 2
- C) 3
- D) 4

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5. If an equation is balanced properly, both sides of the equation must have the same number of

- A) atoms
- B) coefficients
- C) molecules
- D) moles of molecules

6. Given the unbalanced equation:



What is the coefficient of O<sub>2</sub> when the equation is balanced correctly using the *smallest* whole number coefficients?

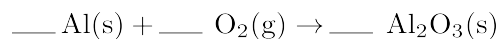
- A) 1
  - B) 2
  - C) 3
  - D) 4
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7. Which equation is correctly balanced?

- A)  $\text{H}_2 + \text{O}_2 \rightarrow \text{H}_2\text{O}$
- B)  $\text{Ca} + \text{Cl}_2 \rightarrow \text{CaCl}$
- C)  $2 \text{H}_2 + \text{O}_2 \rightarrow 2 \text{H}_2\text{O}$
- D)  $\text{Ca} + \text{Cl}_2 \rightarrow \text{Ca}_2\text{Cl}$

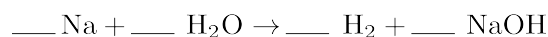
8. Given the unbalanced equation:



When this equation is correctly balanced using smallest whole numbers, what is the coefficient of  $\text{O}_2$  (g)?

- A) 6
- B) 2
- C) 3
- D) 4

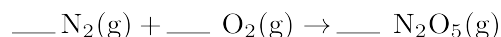
9. Given the unbalanced equation:



When the equation is correctly balanced using the smallest whole-number coefficients, the coefficient for  $\text{H}_2\text{O}$  is

- A) 1
- B) 2
- C) 3
- D) 4

10. Given the unbalanced equation:



When the equation is balanced using smallest whole numbers, the coefficient of  $\text{N}_2(\text{g})$  will be

- A) 1
- B) 2
- C) 5
- D) 4

11. Given the unbalanced equation:

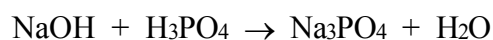


What is the coefficient of  $\text{Al}_2(\text{SO}_4)_3$  when the equation is completely balanced using the smallest whole-number coefficients?

- A) 1
- B) 2
- C) 3
- D) 4

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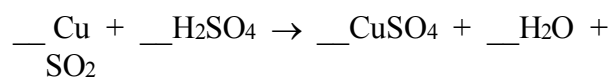
12. Given the unbalanced equation:



When the equation is correctly balanced, the coefficient of  $\text{H}_2\text{O}$  will be

- A) 1
- B) 2
- C) 3
- D) 4

13. When the equation

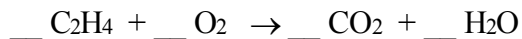


is correctly balanced, what is the coefficient of  $\text{CuSO}_4$ ?

- A) 1
  - B) 2
  - C) 3
  - D) 4
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14. When the equation



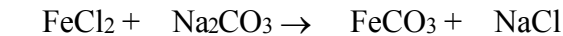
is balanced using smallest whole numbers, what is the coefficient of the  $\text{O}_2$ ?

- A) 1    B) 2    C) 3    D) 4

15. Which equation is correctly balanced?

- A)  $\text{CaO} + 2\text{H}_2\text{O} \rightarrow \text{Ca}(\text{OH})_2$   
B)  $\text{NH}_3 + 2\text{O}_2 \rightarrow \text{HNO}_3 + \text{H}_2\text{O}$   
C)  $\text{Ca}(\text{OH})_2 + 2\text{H}_3\text{PO}_4 \rightarrow \text{Ca}_3(\text{PO}_4)_2 + 3\text{H}_2\text{O}$   
D)  $\text{Cu} + \text{H}_2\text{SO}_4 \rightarrow \text{CuSO}_4 + \text{H}_2\text{O} + \text{SO}_2$

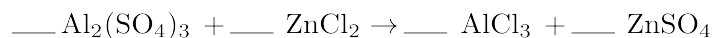
16. Given the equation:



When the equation is correctly balanced using the smallest whole numbers, the coefficient of  $\text{NaCl}$  is

- A) 6    B) 2    C) 3    D) 4

17. When the equation

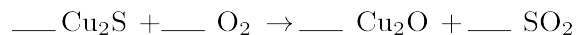


is correctly balanced using the smallest whole number coefficients, the sum of the coefficients is

- A) 9                    B) 8                    C) 5                    D) 4

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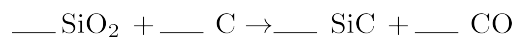
18. When the equation



is completely balanced using smallest whole numbers the coefficient of the  $\text{O}_2$  would be

- A) 5    B) 2    C) 3    D) 4

19. When the equation

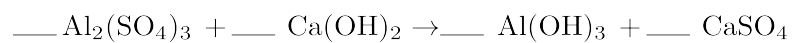


is correctly balanced using whole-number coefficients, the sum of all the coefficients is

- A) 6    B) 7    C) 8    D) 9
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20. Given the unbalanced equation:



When the equation is completely balanced using the smallest whole number coefficients the sum of the coefficients is

A) 5

B) 9

C) 3

D) 4

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