

Balancing equations chp6 (Homework)

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Chemistry_Questions_0132

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1.

In an ordinary chemical reaction, _____ are neither created nor destroyed.

2.

Balancing an equation for a reaction ensures that the number of each type of atom is _____ on both sides of the equation.

3.

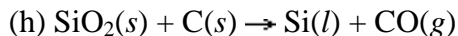
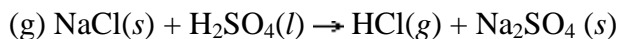
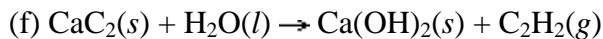
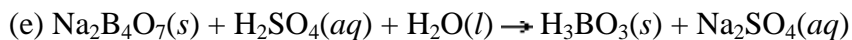
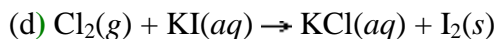
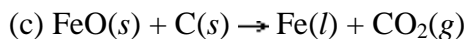
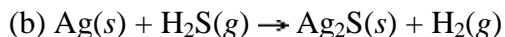
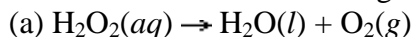
In a chemical equation for a reaction, the notation "(aq)" after a substance's formula means that the substance is dissolved in _____.

4.

Ozone gas is a form of elemental oxygen containing molecules with three oxygen atoms, O₃. Ozone is produced from atmospheric oxygen gas O₂, by the high energy outbursts found in lightening storms. Write the unbalanced equation for the formation of ozone gas from oxygen gas. (Type your answer using the format CO₂ for CO₂.)

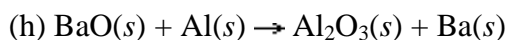
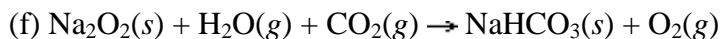
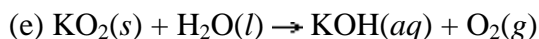
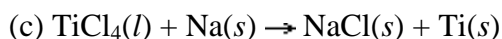
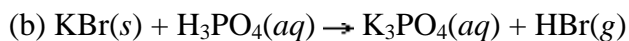
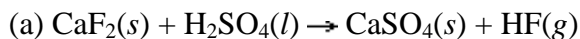
5.

Balance each of the following chemical equations. (Use the lowest possible coefficients.)



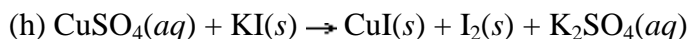
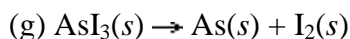
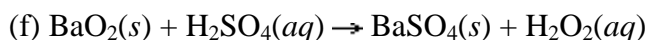
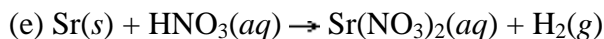
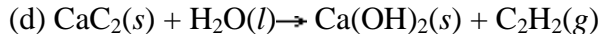
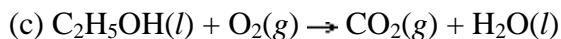
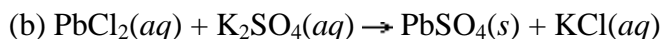
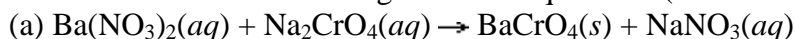
6.

Balance each of the following chemical equations. (Use the lowest possible coefficients.)



7.

Balance each of the following chemical equations. (Use the lowest possible coefficients.)



8.

The Hall process is an important method by which pure aluminum is prepared from its oxide (alumina, Al_2O_3) by indirect reaction with graphite (carbon). Balance the following equation, which is a simplified representation of this process. (Use the lowest possible coefficients.)

9.

Write a chemical equation for the following reaction. (Type your answer using the format CH₄ for CH₄.)

The solids aluminum and sulfur react to produce aluminum sulfide.

Classify the reaction into as many categories as possible.

10.

Write a chemical equation for the following reaction. (Type your answer using the format CH₄ for CH₄.)

Ethane gas (C₂H₆) burns in air, producing carbon dioxide gas and water vapor. Classify the reaction into as many categories as possible.

11.

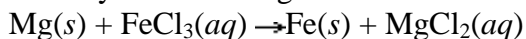
What are five classes of chemical reactions? (10.2)

12.

How would you classify a chemical reaction between two reactants that produces one product? (10.2)

13.

Classify the following chemical reaction. (10.2)



14.

In each of the following pairs, which element will replace the other in a reaction? (10.2)

(a) tin and sodium

(b) fluorine and iodine

(c) lead and silver

(d) copper and nickel

15.

Classify each of the following reactions.

(a) hydrogen iodide(g) \rightarrow hydrogen(g) + iodine(g)

(b) aluminum(s) + iodine(s) \rightarrow aluminum iodide(s)

(c) iron(II) oxide(s) + oxygen(g) \rightarrow iron(III) oxide(s)

16.

Classify each of the following reactions.

(a) butane (C₄H₁₀)(l) + oxygen(g) \rightarrow carbon dioxide(g) + water(l)

(b) aluminum carbonate(s) \rightarrow aluminum oxide(s) + carbon dioxide(g)

(c) silver nitrate(aq) + sodium sulfide(aq) \rightarrow silver sulfide(s) + sodium nitrate(aq)

17.

Classify each of the following reactions. (Select all that apply.)

(a) iron(s) + fluorine(g) \rightarrow iron(III) fluoride(s)

(b) sulfur trioxide(g) + water(l) \rightarrow sulfuric acid(aq)

(c) sodium(s) + magnesium iodide(aq) \rightarrow sodium iodide(aq) + magnesium(s)

(d) vanadium(s) + oxygen(g) \rightarrow vanadium(V) oxide(s)

18.

Classify each of the following reactions.

(a) lithium(s) + gold(III) chloride(aq) \rightarrow lithium chloride(aq) + gold(s)

(b) iron(s) + tin(IV) nitrate(aq) \rightarrow iron(III) nitrate(aq) + tin(s)

(c) nickel(II) chloride(s) + oxygen(g) \rightarrow nickel(II) oxide(s) + dichlorine pentoxide(g)

(d) lithium chromate(aq) + barium chloride(aq) \rightarrow lithium chloride(aq) + barium chromate(s)