

## QUIZ

## Quantifying Reactants and Products

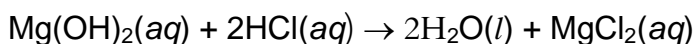
1. Use what you know about balancing equations to solve the problem.

A specialty food store received orders for 725 fruit baskets during the 7-day period leading up to a major holiday. According to the fruit basket recipe shown, how many strawberries will the specialty store need to fulfill all 725 orders?

1 fruit basket = 4 oranges (O) + 3 apples (A) + 2 pears (P) + 6 strawberries (S)

1 fruit basket =  $4O + 3A + 2P + 6S \rightarrow O_4A_3P_2S_6$

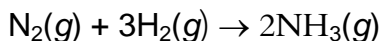
- A. 1450 strawberries
  - B. 2175 strawberries
  - C. 2900 strawberries
  - D. 4350 strawberries**
2. This chemical reaction follows the law of conservation of mass.



Which of the statements are **true**? Select all that apply.

- A.** In this reaction, atoms rearrange to form new molecules.
- B. Atoms are created and destroyed in this chemical reaction.
- C.** Atoms are neither created nor destroyed in this chemical reaction.
- D. In this reaction, atoms do not rearrange to form new molecules.
- E.** In this reaction, the number of atoms of the reactants is the same as the number of atoms of the products.
- F. In this reaction, the number of atoms of the reactants is different than the number of atoms of the products.

3. Observe the reaction.



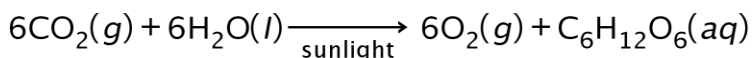
In this reaction, \_\_\_\_\_ mole(s) of  $\text{H}_2$  is/are proportional with \_\_\_\_\_ moles of  $\text{NH}_3$ .

Which of the following options completes the sentence?

- A. 1 and 5
- B. 3 and 2**
- C. 5 and 5
- D. 6 and 6

**Read the passage and use the equation to answer the next two questions.**

A group of botanists is researching photosynthesis reactions in a variety of plants. Plants convert carbon dioxide and water into glucose ( $\text{C}_6\text{H}_{12}\text{O}_6$ ) according to the given reaction:



4. The photosynthesis equation has \_\_\_\_\_ molecules of reactants and \_\_\_\_\_ molecules of product.

Which of the following options completes the sentence?

- A. 6 and 6
- B. 12 and 7**
- C. 18 and 18
- D. 24 and 36

5. Find the reactant and product molar masses for this photosynthesis reaction reported to one place after the decimal point.

- A. The reactant mass is 186.0 grams, and the product mass is 186.0 grams.
- B. The reactant mass is 186.0 grams, and the product mass is 372.0 grams.
- C. The reactant mass is 372.0 grams, and the product mass is 186.0 grams.
- D. The reactant mass is 372.0 grams, and the product mass is 372.0 grams.**