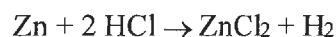1. Given the equation:

$$Zn + 2\ HCl \rightarrow ZnCl_2 + H_2$$

How many moles of HCl would be required to produce a total of 2 moles of H_2?
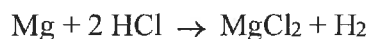
A) 0.5   B) 2   C) 3   D) 4

2. Given the reaction:

$$6\ CO_2 + 6\ H_2O \rightarrow C_6H_{12}O_6 + 6\ O_2$$

What is the total number of moles of water needed to make 2.5 moles of $C_6H_{12}O_6$?

A) 2.5   B) 6.0   C) 12   D) 15

3. Given the reaction:

$$Mg + 2\ HCl \rightarrow MgCl_2 + H_2$$
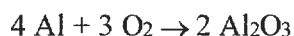
What is the total number of grams of Mg consumed when 0.50 mole of H_2 is produced?

A) 6.0 g   B) 12 g   C) 3.0 g   D) 24 g
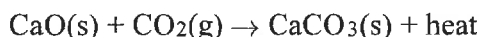
4. Given the reaction:

$$4\ Al + 3\ O_2 \rightarrow 2\ Al_2O_3$$

What is the total number of moles of aluminum oxide that can be formed when 54 grams of aluminum reacts completely with oxygen?

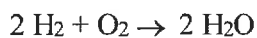A) 1.0 mole   B) 2.0 moles

C) 3.0 moles   D) 4.0 moles

5. Given the balanced equation representing a reaction:

$$CaO(s) + CO_2(g) \rightarrow CaCO_3(s) + heat$$

What is the total mass of CaO(s) that reacts completely with 88 grams of $CO_2(g)$ to produce 200. grams of $CaCO_3(s)$?

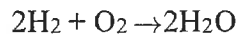A) 56 g   B) 88 g   C) 112 g   D) 288 g

6. Given the reaction:

$$2\ H_2 + O_2 \rightarrow 2\ H_2O$$

The total number of grams of O_2 needed to produce 54 grams of water is

A) 36   B) 48   C) 61   D) 75

7. Given the balanced equation representing a reaction:
$$2H_2 + O_2 \rightarrow 2H_2O$$

What is the total mass of water formed when 8 grams of hydrogen reacts completely with 64 grams of oxygen?

A) 18 g   B) 36 g   C) 56 g   D) 72 g

8. Given the reaction:

$$Mg + H_2SO_4 \rightarrow MgSO_4 + H_2$$
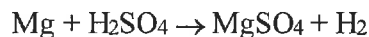
How many grams of H_2SO_4 are needed to produce exactly 11.2 liters of H_2, measured at STP?

A) 24.5   B) 49.0   C) 98.0   D) 196

9. Given the reaction:

$$2\ C_8H_{18}(g) + 25\ O_2(g) \rightarrow 16\ CO_2(g) + 18\ H_2O(g)$$
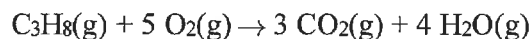
What volume of $C_8H_{18}(g)$ will completely react to produce exactly 36 liters of $H_2O(g)$?

A) 27 L   B) 2.0 L   C) 36 L   D) 4.0 L

10. Given the balanced equation:

$$C_3H_8(g) + 5\ O_2(g) \rightarrow 3\ CO_2(g) + 4\ H_2O(g)$$

What is the total number of liters of $CO_2(g)$ produced when 20.0 liters of $O_2(g)$ are completely consumed?

A) 12.0 L   B) 22.4 L

C) 3.00 L   D) 5.00 L

Answer Key
stoichiometry practice test

1. D
2. D
3. B
4. A
5. C
6. B
7. D
8. B
9. D
10. A