

## ENERGY CHANGES AND RATES OF REACTION

### Lesson 3 Quiz: **Enthalpy Change**

1. What is the molar enthalpy change for the following reaction?  
 $2 \text{HBr(g)} + 36 \text{ kJ} \rightarrow \text{H}_2\text{(g)} + \text{Br}_2\text{(l)}$   
A. +18 kJ/mol HBr  
B. -18 kJ/mol HBr  
C. +36 kJ/mol HBr  
D. -36 kJ/mol HBr
2. Which is true for a potential-energy diagram for an endothermic reaction?  
A. The products are lower than the reactants.  
B. The products are higher than the reactants.  
C. The products and reactants are at the same level.
3. Nitrogen monoxide decomposes by the following reaction.  
 $2 \text{NO(g)} \rightarrow \text{N}_2\text{(g)} + \text{O}_2\text{(g)} \quad \Delta H_{\text{decomp}} = -90.2 \text{ kJ/mol NO}$   
What is the enthalpy change for the decomposition of 22 g of nitrogen monoxide?  
A. -78 kJ  
B. -16 kJ  
C. +39 kJ  
D. -66 kJ
4. Methane decomposes by the following reaction.  
 $\text{CH}_4\text{(g)} \rightarrow \text{C(s)} + 2 \text{H}_2\text{(g)} \quad \Delta H = +74 \text{ kJ}$   
Which is true?  
A. The decomposition of methane is endothermic.  
B. The decomposition of methane is exothermic.

### ANSWERS

1. A
2. B
3. D
4. A