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If a catalyst changes the activation energy of a forward reaction from 28.0 kcal/mol to 23.0 kcal/mol, what effect does it have on the reverse reaction?

A. The activation of the reverse reaction is lowered by 5 kcal/mol
B. The activation of the reverse reaction is increased by 5 kcal/mol
D. The activation of the reverse reaction is increased by 23 kcal/mol
E. The activation of the reverse reaction is lowered by 28 kcal/mol
F. The activation of the reverse reaction is increased by 28 kcal/mol
G. It cannot be determined from the information provided

Fluorine can react with oxygen to form oxygen difluoride according to the equation $2 \text{F}_2 (\text{g}) + \text{O}_2 (\text{g}) \rightarrow 2 \text{OF}_2 (\text{g})$. What is the value of the equilibrium constant if at equilibrium $[\text{O}_2] = 0.200 \text{ mol/L}$, $[\text{F}_2] = 0.0100 \text{ mol/L}$, and $[\text{OF}_2] = 0.0633 \text{ mol/L}$?

A. 0.00401
B. 0.0100
C. 0.0633
D. 0.200
F. 200.
G. none of the answers is correct

Hydrogen chloride is formed by the reaction of hydrogen and chlorine gases. For the reaction at 25°C, $K_c = 2.6 \times 10^{33}$ and the enthalpy of reaction is -44 kcal/mol. Explain how the equilibrium will shift when the hydrogen chloride concentration is increased?

A. It will shift in the forward direction and be product-favored until equilibrium is re-established.
B. It will shift in the forward direction and

be reactant-favored until equilibrium is re-established.

C. It will shift in the reverse direction and be reactant-favored until equilibrium is re-established.

E. It cannot be determined from the information provided

For the reaction described in question 8 explain how the equilibrium will shift when the hydrogen concentration is decreased?

A. It will shift in the forward direction and be reactant-favored until equilibrium is re-established.

B. It will shift in the forward direction and be product-favored until equilibrium is re-established.

D. It will shift in the reverse direction and be reactant-favored until equilibrium is re-established.

E. It cannot be determined from the information provided

For the reaction described in question 8 explain how the equilibrium will shift when the temperature of the system increases?

A. It will shift in the forward direction and be product-favored until equilibrium is re-established.

B. It will shift in the forward direction and be reactant-favored until equilibrium is re-established.

C. It will shift in the reverse direction and be reactant-favored until equilibrium is re-established.

D. It will shift in the reverse direction and be product-favored until equilibrium is re-established.