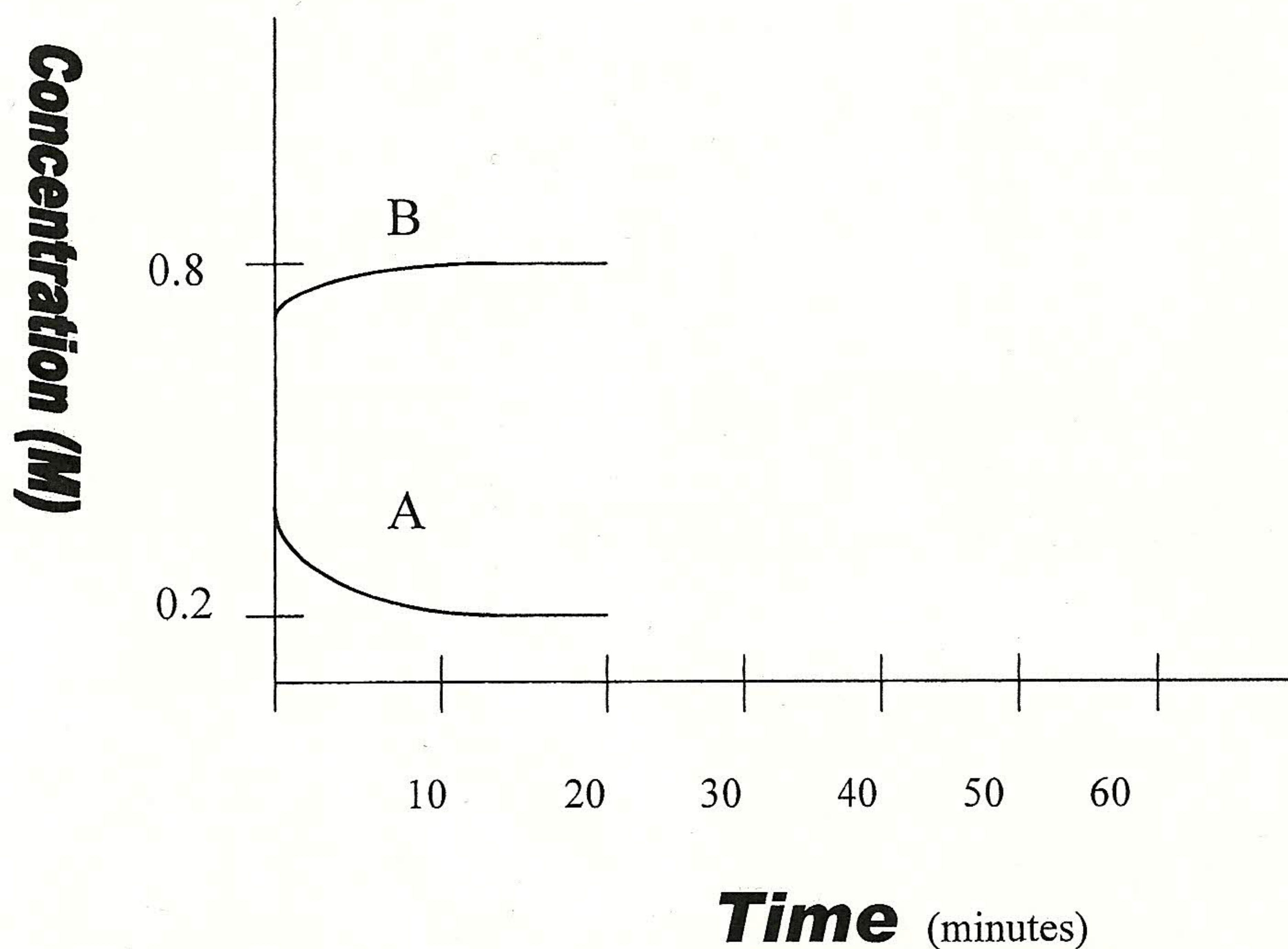


Equilibrium Questions - Set VII - LeChatelier's Principle

1. Consider the equilibrium: $B_{(g)} \rightleftharpoons 2A_{(g)}$ $\Delta H = -120 \text{ kJ}$. The following diagram represents the above equilibrium.



- (a) How long did it take for the system to its first reach equilibrium? _____ min.
- (b) What reaction (forward or reverse) is taking placing during the first ten minutes?
- (c) At time = 20 minutes the pressure on the system is increased. Sketch on the above diagram the effects of increasing the pressure. Assume that the system reaches equilibrium some ten minutes later.
- (d) At time = 30 minutes the temperature of the system was raised. Sketch on the above diagram the effects of increasing the temperature. Assume that the system reaches equilibrium some 10 minutes later.
- (e) At time = 50 minute some additional A is added to the system. Sketch on the above diagram the effects of increasing the concentration of A. Assume that the system reaches equilibrium some 10 minutes later.
- (f) Calculate the equilibrium constant at $t = 15$ minutes.