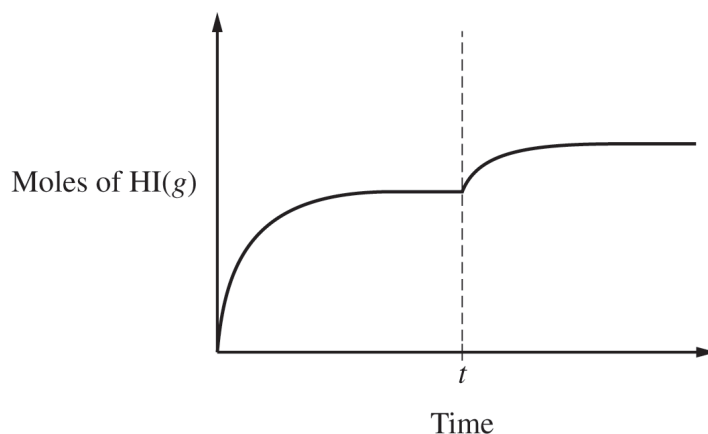


5. Hydrogen gas and iodine gas react to form hydrogen iodide at an elevated temperature, as represented by the following equation.



- (a) Write the expression for the equilibrium constant, K_c , for this reaction.

- (ii) A student monitors the number of moles of $\text{HI}(g)$ over time. Hypothesize an experimental change that could have been applied to the system in the rigid container at time t to result in the change in the number of moles of $\text{HI}(g)$ shown in the graph. Assume that the student did not add more $\text{HI}(g)$ to the system.



- (iii) After equilibrium is established, the mixture is transferred to a larger container at constant temperature. As a result, would the number of moles of $\text{HI}(g)$ increase, decrease, or remain the same? Justify your answer.