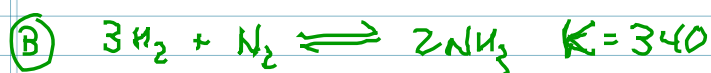


At EQ, at a certain T, you measure

$$[\text{NH}_3] = 0.031\text{M}, [\text{H}_2] = 0.055\text{M}, [\text{N}_2] = 0.017\text{M}$$

What is K at this T?

$$K = \frac{[\text{NH}_3]^2}{[\text{H}_2]^3[\text{N}_2]} = \frac{(0.031)^2}{(0.055)^3(0.017)} = 340$$



At a particular time, at the same T,
you measure

$$[\text{NH}_3] = [\text{N}_2] = [\text{H}_2] = 0.025\text{M}$$

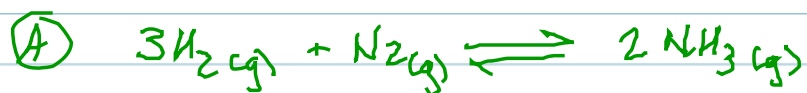
1) Are you at EQ?

2) If not, in which direction is the reaction "headed"?

$$Q = \frac{[\text{NH}_3]^2}{[\text{H}_2]^3[\text{N}_2]} = \frac{(0.025)^2}{(0.025)^3(0.025)} = 1600$$

$$Q \neq K \Rightarrow Q \downarrow \Rightarrow [\text{R}] \uparrow [\text{P}] \downarrow$$

$Q > K \Rightarrow$ reverse reaction is favored
(faster)

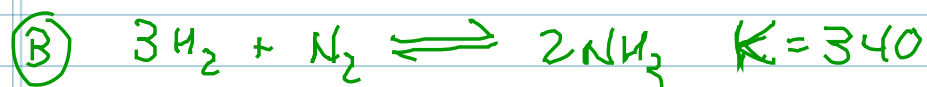


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