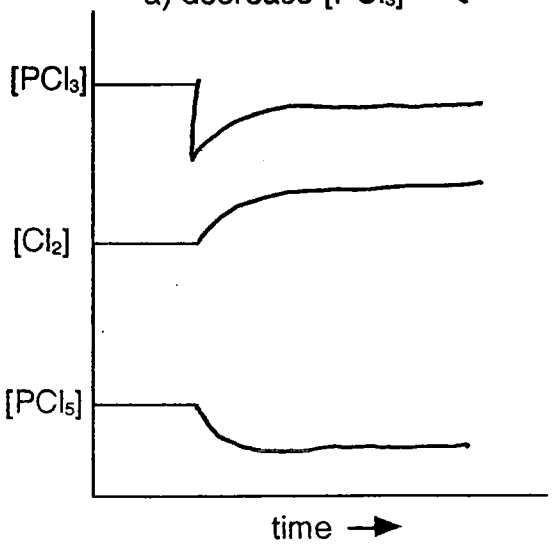
Ch 12 Graphing Equilibrium Shifts

Name Key

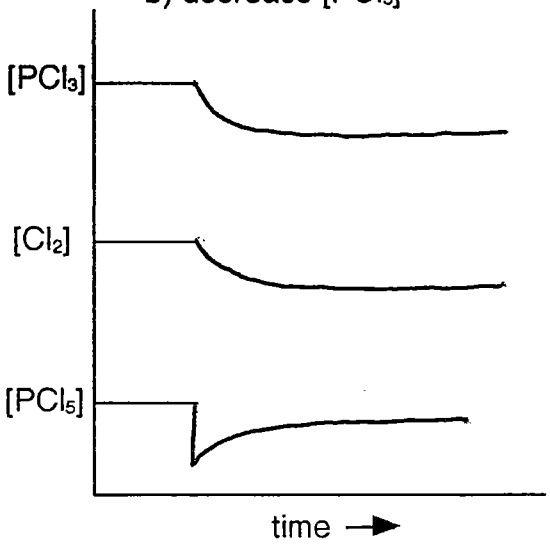
aph the concentrations as a stress is added to the equilibrium system.

$PCl_{3(g)} + Cl_{2(g)} \leftrightarrow PCl_{5(g)} + 92.5kJ$

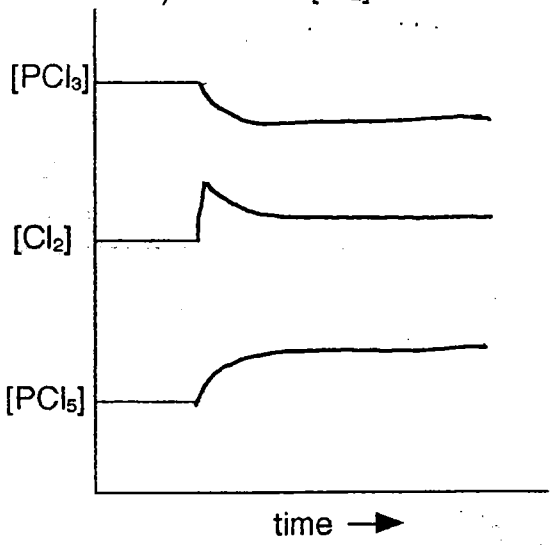
a) decrease $[PCl_3]$ ←



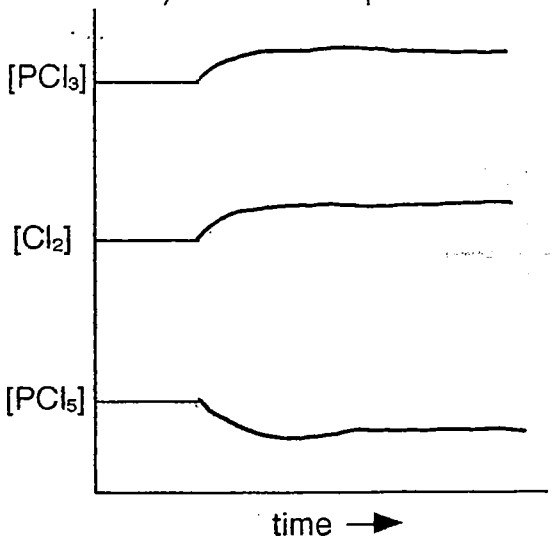
b) decrease $[PCl_5]$ →



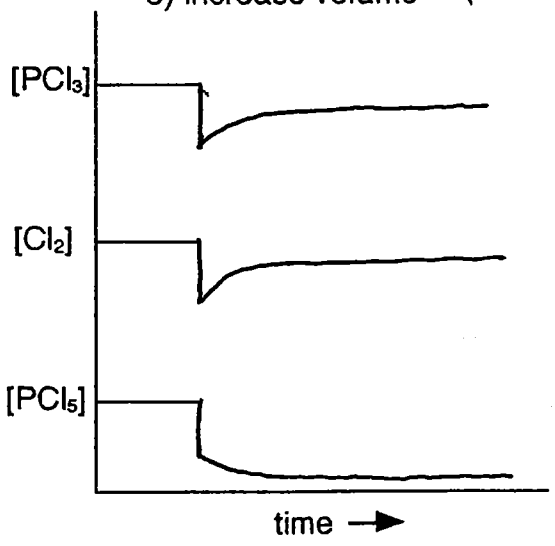
c) increase $[Cl_2]$ →



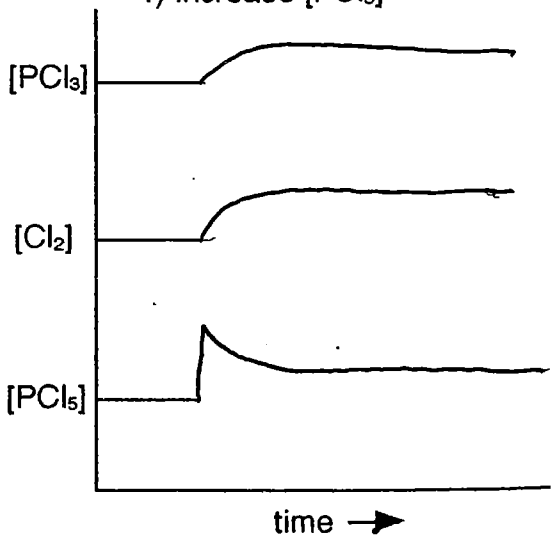
d) increase temperature ←



e) increase volume ←

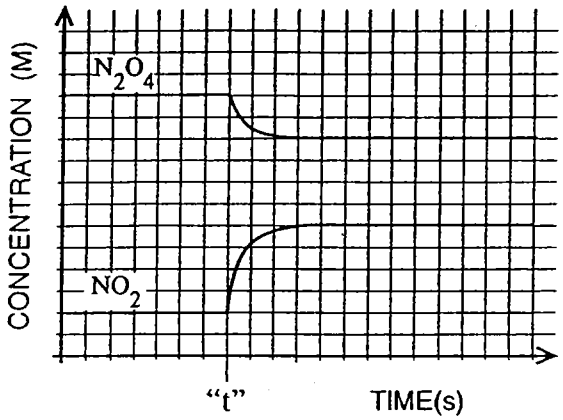


f) increase $[PCl_5]$



2. Consider the following concentration versus time graph for the equilibrium:

$$N_2O_{4(g)} \rightleftarrows 2NO_{2(g)}$$



C

At time = " t ", which one of the following stresses occurred?

A. Catalyst was added.
B. Pressure was changed.
C. Temperature was changed.
D. Concentration of NO_2 was changed.

3. Which of the following reactions will shift left when pressure is increased **and** when temperature decreased?

P↑(V↓)	T↓
→	←
→	→
←	←
→	→

C

A. $N_{2(g)} + 2O_{2(g)} + \text{heat} \rightleftarrows 2NO_{2(g)}$
B. $N_{2(g)} + 3H_{2(g)} \rightleftarrows 2NH_{3(g)} + \text{heat}$
C. $CH_{4(g)} + H_2O_{(g)} + \text{heat} \rightleftarrows CO_{(g)} + 3H_{2(g)}$
D. $CS_{2(g)} + 4H_{2(g)} \rightleftarrows CH_{4(g)} + 2H_2S_{(g)} + \text{heat}$

4. Consider the following equilibrium:

$$COCl_{2(g)} \rightleftarrows CO_{(g)} + Cl_{2(g)}$$

Which of the following changes will occur when some $Cl_{2(g)}$ is added to the above system?

A

A. $[COCl_2]$ increases and $[CO]$ decreases.
B. $[COCl_2]$ decreases and $[CO]$ decreases.
C. $[COCl_2]$ increases and $[CO]$ increases.
D. $[COCl_2]$ decreases and $[CO]$ increases.