

4. For the system $A + B \rightleftharpoons 2C$ the equilibrium constant is .25. If .50 moles of C are placed in a 4.0 liter container at 25 C, what will be the equilibrium concentrations of all species?

ICE This is an "initial" concentration

$$A + B \rightleftharpoons 2C$$

i	0	0	.125
c	x	x	-2x
e	.05	.05	.125 - 2x

$K_c = \frac{[C]^2}{[A][B]}$

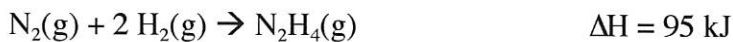
$.25 = \frac{(.125 - 2x)^2}{x \cdot x}$
 $.5 = \frac{.125 - 2x}{x}$
 $.5x = .125 - 2x$
 $2.5x = .125$
 $x = .05$

5. Put the appropriate arrows in all of the blanks..... (all substances are gases)

	2SO ₃	+	CO ₂	+	heat	<----->	CS ₂	+	4O ₂
a.	up		↓		↓		↑		↑
b.	↑		down		↑		↓		↓
c.	↑		↑		↑		up		↓
d.	↑		↑		down		↓		↓
e.	↑		↑		↑		↓		↓

Pressure increases

6. Suggest four ways in which the concentration of hydrazine, N₂H₄, could be increased in an equilibrium described by the equation.



- a. raise pressure
- b. raise temp
- c. increase H₂
- d. increase N₂