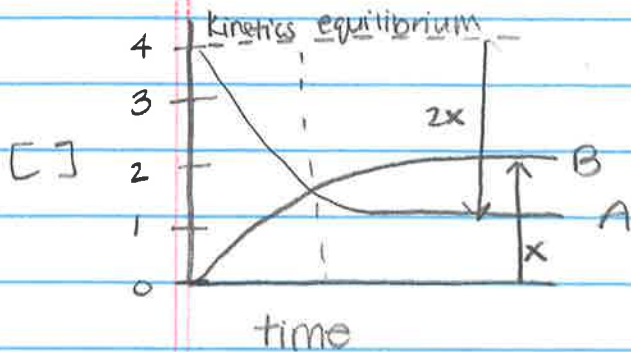


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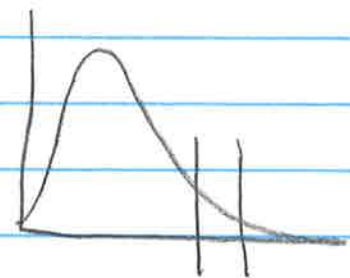
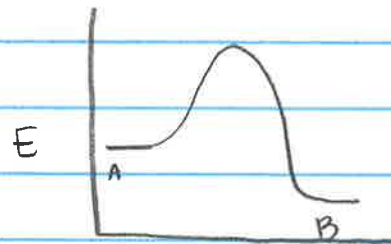
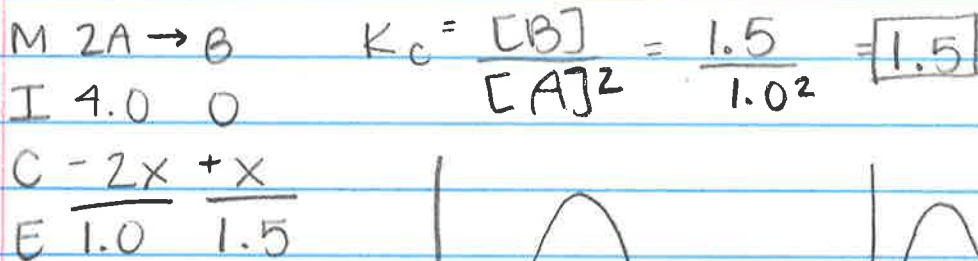


Set up a MICE table for the diagram

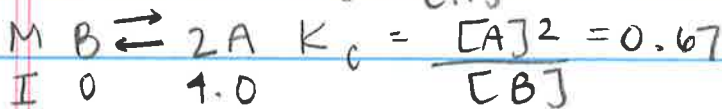
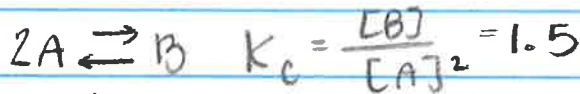
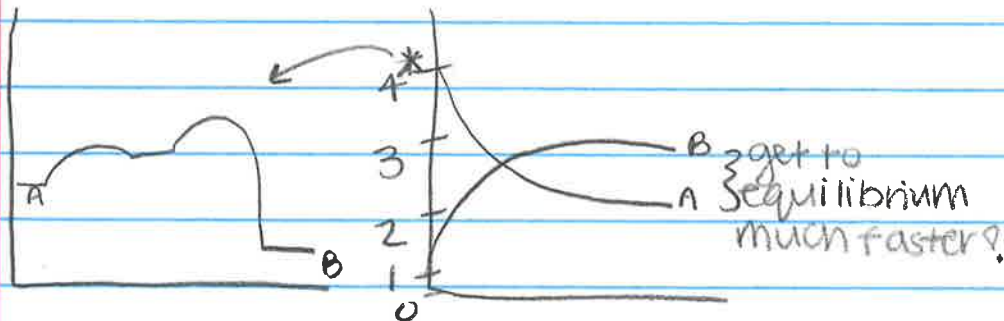
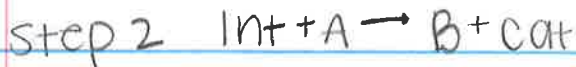
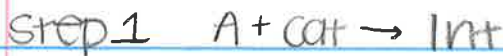
Calc.  $K_c$

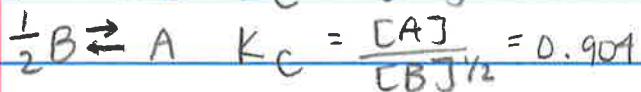
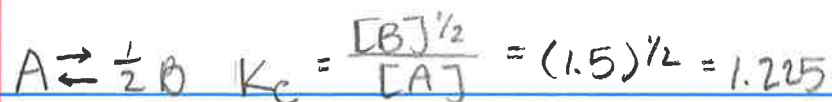
Sketch a reaction profile diagram

↳ is it exothermic?

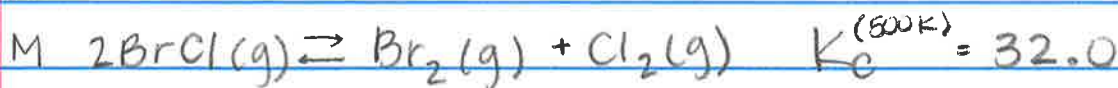
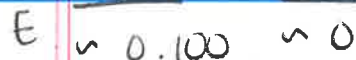
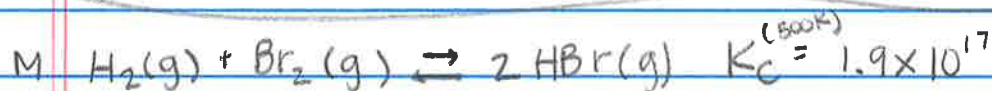


progress





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$$\hookrightarrow 0.7 - 0.644 = \boxed{0.056}$$

$$\frac{x^2}{(0.70 - 2x)^2} = 32.0$$

$$\frac{x}{0.7 - 2x} = \sqrt{32} = 5.657$$

$$\hookrightarrow 3.96 - 11.314x = x$$

$$3.96 = 12.314x$$

$$\hookrightarrow \boxed{x = 0.322}$$

CHECK:

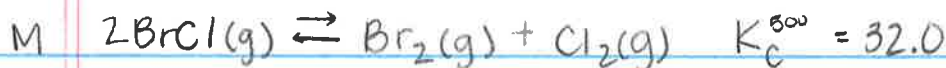
$$32 = \frac{(0.322)^2}{(0.0566)^2} = 32.14$$

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"too low"



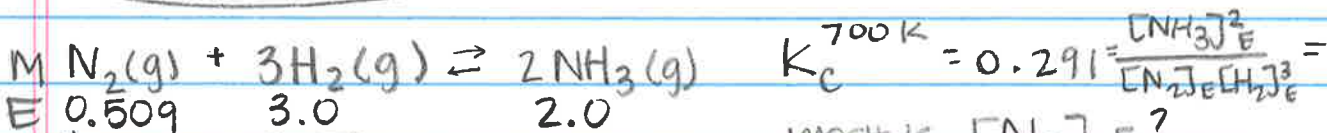
$$Q_c < K_c$$



I 0.700      0.200      0.200      ←  $Q_c = \frac{[\text{Br}_2]_I [\text{Cl}_2]_I}{[\text{BrCl}]_I^2} = \frac{0.200^2}{0.700^2} = 0.0816$

C  $-2x$        $+x$        $+x$

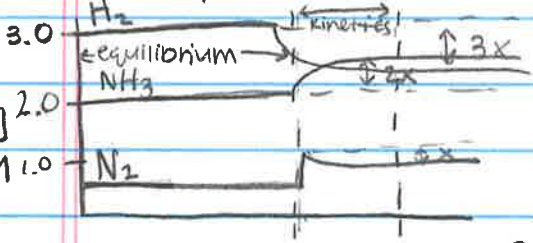
E  $\leftarrow K_c = \frac{[\text{Br}_2]_E [\text{Cl}_2]_E}{[\text{BrCl}]_E^2} = 32.0$



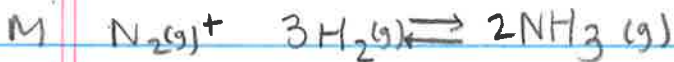
E 0.509      3.0      2.0

what is  $[\text{N}_2]_E$ ?

Adding some  $\text{N}_2$  until  $[\text{N}_2] = 1.0 \text{ M}$



time  $\frac{2.0^2}{[\text{N}_2] 3.0^3} = 0.291 \rightarrow [\text{N}_2]_E = \boxed{0.509 \text{ M}}$



E 0.509      3.0      2.0

Add  $\text{N}_2$

I 1.00      3.0      2.0       $Q_c = 0.148 \rightarrow$  shift to the right

C  $-x$        $-3x$        $+2x$

E  $1.00 - x$        $3.0 - 3x$        $2.0 + 2x$