

⑩ Reaction 1 \rightarrow Reaction 2

K

① Flip

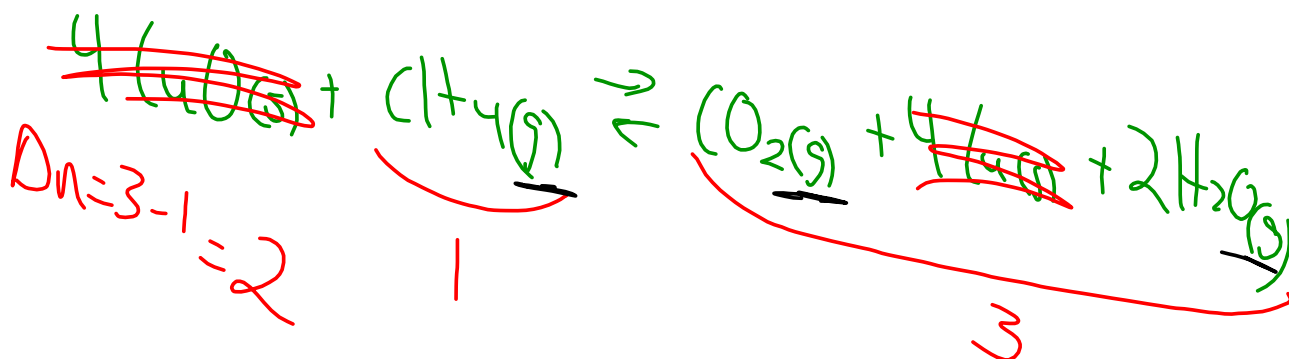
② $\times 3$

$$\frac{1}{K}$$

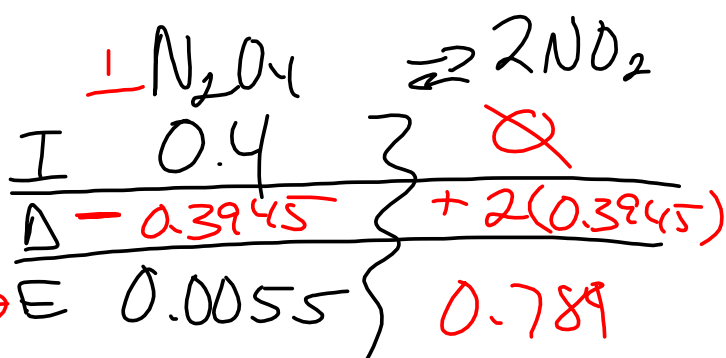
$$\left(\frac{1}{K}\right)^3 \text{ OR } \frac{1}{K^3}$$

$$\textcircled{11} \quad K_p = K_c (RT)^{\Delta n} \quad \left(\begin{array}{l} PV = nRT \\ P = \frac{n}{V}RT \end{array} \right)$$

$$K_p = 1.10 \left[(0.08206)(298) \right]^2 = 657.79$$

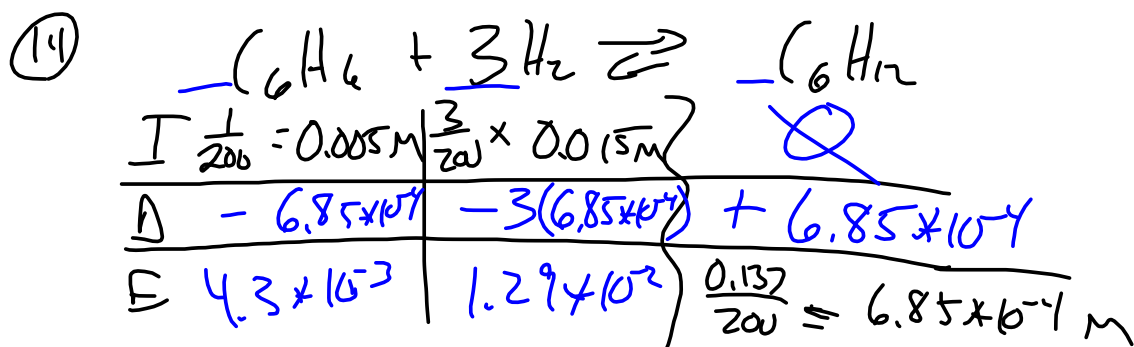


(2)



$$K = \frac{[NO_2]^2}{[N_2O_4]} = \frac{(0.789)^2}{0.0055} = 113.19$$





$$K = \frac{[\text{C}_6\text{H}_{12}]}{[\text{C}_6\text{H}_6][\text{H}_2]^3} = \frac{6.85 \times 10^{-4}}{(4.3 \times 10^{-3})(1.29 \times 10^{-2})^3} = 7.3 \times 10^{-1}$$



If Add O_2



(16)

$$SO_2Cl_2 \rightleftharpoons SO_2 + Cl_2$$

	$-SO_2Cl_2$	\rightleftharpoons	$-SO_2$	$+Cl_2$
I	0.034M		\emptyset	\emptyset
Mole RATIO	$-x$		$+x$	$+x$
E	$0.034-x$		x	x

$$K = \frac{(SO_2)(Cl_2)}{(SO_2Cl_2)} = \frac{5 \times 10^{-3}}{1} = \frac{(x)(x)}{0.034-x}$$

$$x^2 + 5 \times 10^{-3}x - 1.7 \times 10^{-4} = 0$$

$$x = 0.0108$$

(18) $\ln A_t = -kt + \ln A_0$

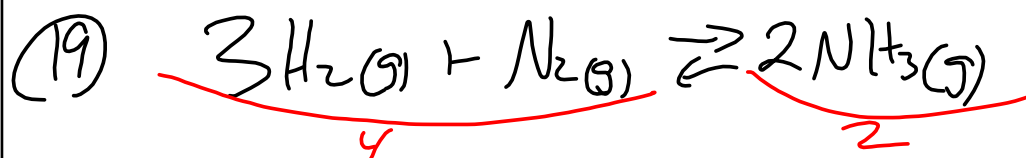
HAVE \rightarrow $\ln 0.15 = -k(79 \text{ min}) + \ln 1$

$k = 0.024 \text{ min}^{-1}$

1.44 sec^{-1}

85% reacted

Have 15%



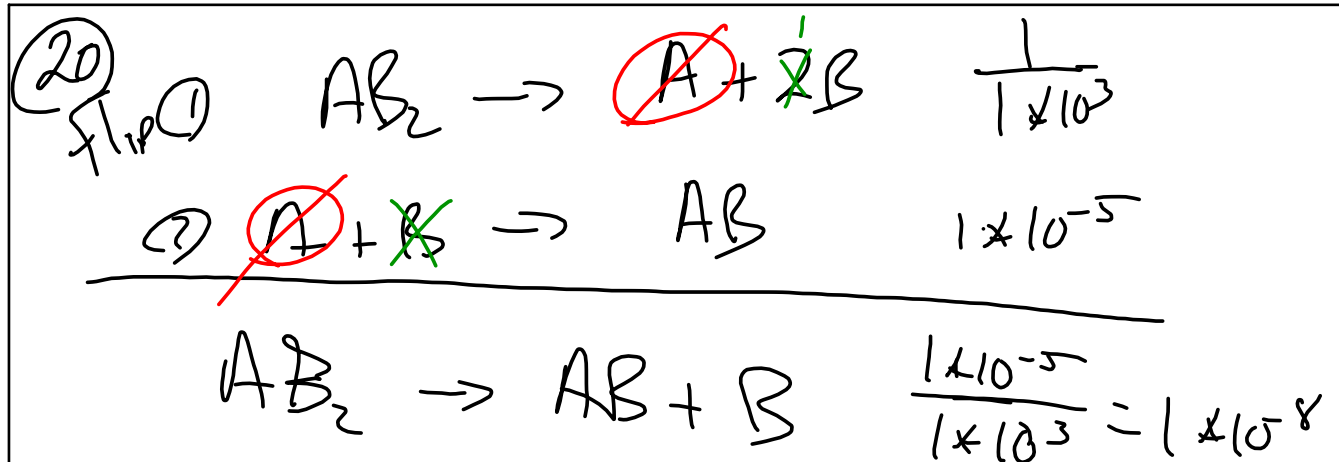
$$K_p = K_c (RT)^{\Delta n}$$

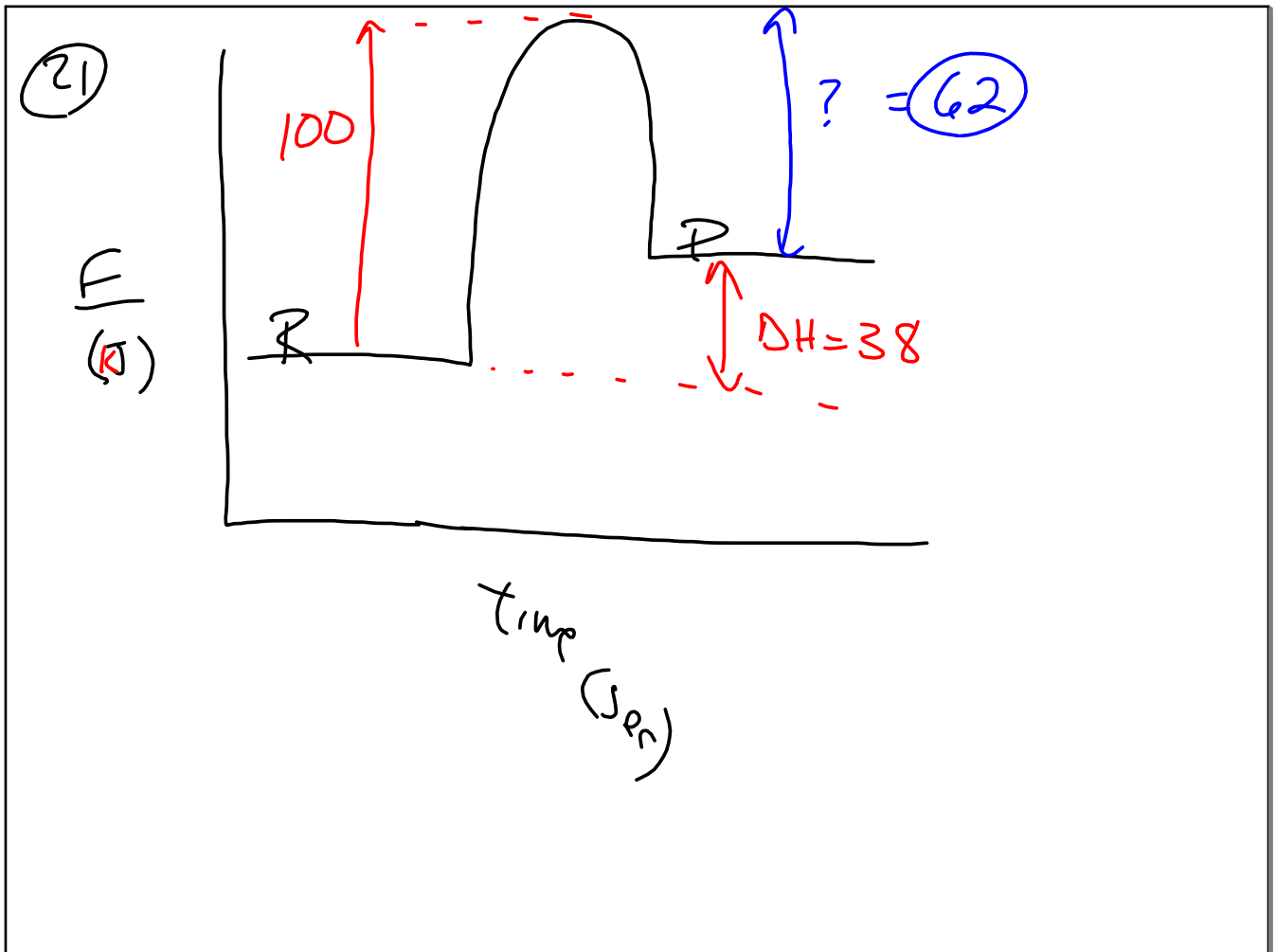
$$\Delta n = 2 - 4 = -2$$

$$K_p = K_c (RT)^{-2}$$

$$\frac{K_p}{1} = \frac{K_c}{(RT)^2}$$

$$K_c = K_p (RT)^2$$





(23) $\frac{1}{A_t} = k t + \frac{1}{A_0}$ $\frac{30 \text{ min}}{60 \text{ sec}} = \frac{1 \text{ min}}{1 \text{ min}} =$

same units!

$\frac{1}{A_t} = (1.2 \times 10^{-2}) (1800) + \frac{1}{0.045}$

$\frac{1}{A_t} = 43.8277$

$A_t = 0.023 \text{ M}$

$$\textcircled{24} \quad t_{1/2} = \frac{1}{k[A_0]} = \frac{1}{(1.2 \times 10^{-3})(0.3)}$$

$$277.78 \text{ sec}$$

$$4.63 \text{ Min}$$

