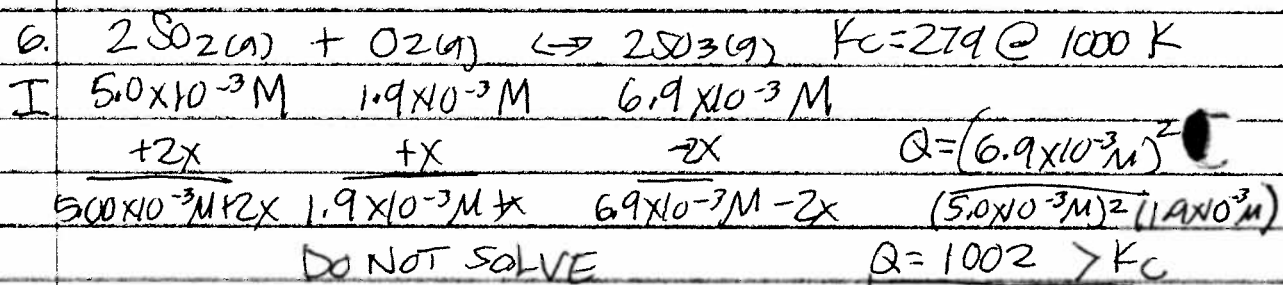


Unit 4 Review

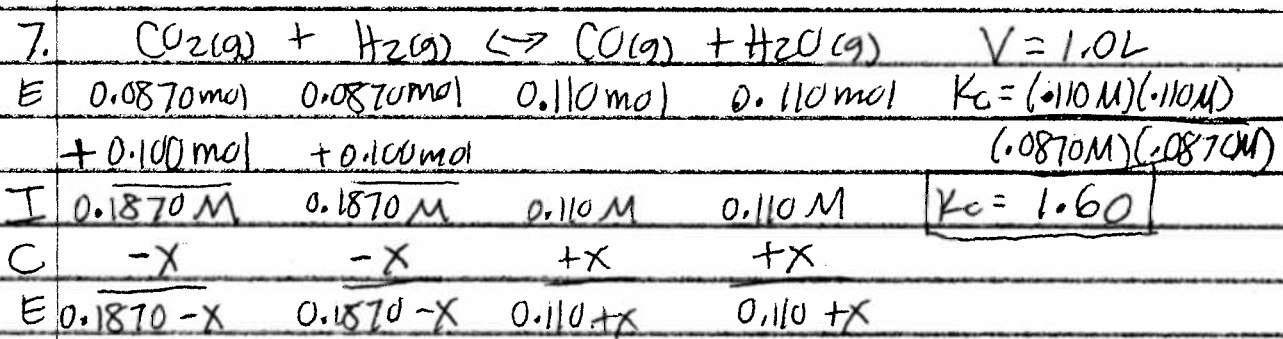
$$P = \frac{nRT}{V} = \frac{(.106 \text{ mol } O_2)(.0821 \frac{\text{atm}}{\text{molK}})(300\text{K})}{5.00\text{L}} = .522 \text{ atm}$$

4. Graham's Law $\frac{\text{rate He}}{\text{rate CH}_4} = \sqrt{\frac{MM_{CH_4}}{MM_{He}}} = \sqrt{\frac{16.0}{4}} = 2$
 rate of He effusion is 2x rate of CH₄

5. $PV = nRT$ $PV = \frac{g}{MM}RT$ $PMM = \frac{g}{V}RT$ $PMM = dRT$
 $d = \frac{PMM}{RT} = \frac{(2.00 \text{ atm})(20.18 \text{ g/mol})}{(.0821 \frac{\text{L atm}}{\text{molK}})(298\text{K})} = 1.65 \text{ g/L}$



$$K_p = 279 \left[(.0821)(1000) \right]^{2-3} = 3.40$$



$$\sqrt{1.60} = \frac{(0.110 + x)^2}{(0.1870 - x)^2}$$

$$1.26 = \frac{.110 + x}{.1870 - x}$$

$$[CO_2] = [H_2] = .1870 - .0560 = .131\text{M}$$

$$[CO] = [H_2O] = .110 + .0560 = .166\text{M}$$

$$.2365 - 1.26x = .110 + x$$

$$x = .0560\text{M}$$

$$P_T = \frac{(.0870 + .0870 + .110 + .110)(.0821)(1259\text{K})}{1.0\text{L}} = 40.7 \text{ atm}$$

Unit 4 Review

- 12. $\uparrow T$ to make particles move so fast that they do not have time to recognize attractions
- $\uparrow v / \downarrow P$ particles far apart so they can't recognize attractions