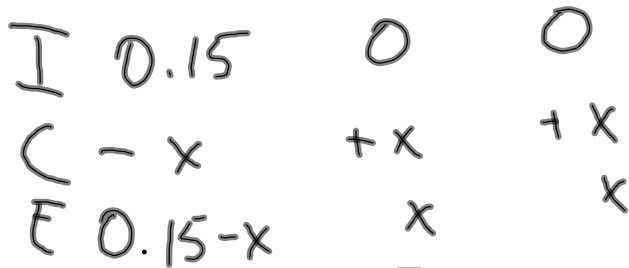
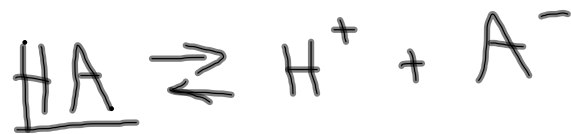


65.
 0.15 M of HA is 3.0% dissociated
 Calculate K_a .



$$\% \text{ dis.} = \frac{[H^+]}{[HA]_0} \times 100$$

$$\frac{3}{100} = \frac{[H^+]}{0.15}$$

$$[H^+] = 0.0045 \text{ M} = x$$

$$[A^-] = 0.0045 \text{ M} = x$$

$$K_a = \frac{[H^+][A^-]}{[HA]}$$

AXIS
 $.15 - x \approx .15$

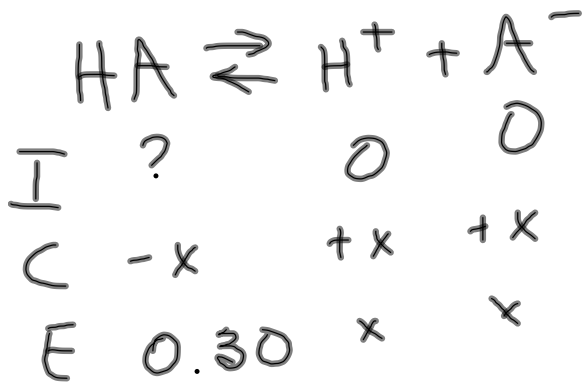
$$K_a = \frac{(.0045)(.0045)}{.15}$$

$.15 - .0045$
 $.1455 \approx .15$

$$= \frac{.15}{1.35 \times 10^{-4}}$$

$$1.4 \times 10^{-4}$$

66. HA
 25% dis.
 eq. conc. = 0.30
 Cal K_a



$$x = \frac{25}{100} = \frac{[H^+]}{[HA]}$$

$$I - x = .30$$

$$I = .30 + x$$

$$I = .30 + .10 = .40$$

$$\frac{25}{100} = \frac{x}{.30 + x}$$

$$25(.30 + x) = 100x$$

$$x = 0.10 = \frac{[H^+]}{[A^-]}$$

$$K_a = \frac{[H^+][A^-]}{[HA]}$$

$$= \frac{(.1)(.1)}{.3}$$

$$= .0333$$