



B	.005 mol	.0045 mol	0
R	-.0045 mol	-.0045 mol	+ $\frac{.0045}{\text{mol}}$
A	.0005 mol	0	.0045 mol
	HA		A ⁻

for before:

$$\text{HA}$$

$$M = \frac{\text{mol}}{\text{L}}$$

$$\text{A}^-_{\text{OH}^-}$$

$$M = \frac{\text{mol}}{\text{L}}$$

$$.100 = \frac{x}{.050 \text{ L}}$$

$$x = .005 \text{ mol}$$

$$.100 = \frac{x}{.045 \text{ L}}$$

$$.0045 \text{ mol} = x$$

After: $\frac{45.0 \text{ mL} + 50.0 \text{ mL}}{95.0 \text{ mL}}$

HA:

$$x = \frac{.0005 \text{ mol}}{.095 \text{ L}}$$

$$x = .00526 \text{ M}$$

A⁻_{C₂H₃O₂⁻}

$$x = \frac{.0045 \text{ mol}}{.095 \text{ L}}$$

$$x = .0474 \text{ M}$$

$$\text{pH} = \text{pK}_a + \log \left[\frac{\text{base}}{\text{acid}} \right]$$

$$= 4.74 + \log \frac{\text{A}^-}{\text{HA}}$$

$$= 4.74 + \log \left(\frac{.0474}{.00526} \right)$$

$$= 5.70$$