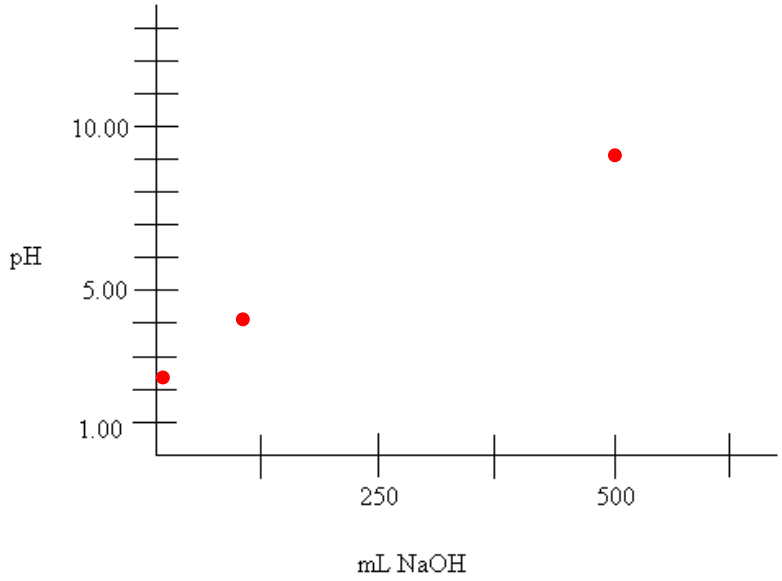
CH_3COOH $NaOH$

1.00 M 0.100 mol H^+ = 0.100 mol OH^- 1.00 M

500 mL add 100 mL

$$0.500 \text{ mol} - 0.100 \text{ mol} = \frac{.400 \text{ mol } CH_3COOH}{0.600 \text{ L}} = 0.667 \text{ M}$$

$$\frac{0.100 \text{ mol}}{0.600 \text{ L}} = 0.167 \text{ M } CH_3COO^-$$



$$CH_3COOH \leftrightarrows CH_3COO^- + H^+$$

	$[CH_3COOH]$	$[CH_3COO^-]$	$[H^+]$
I	0.667	0.167	0.00
C	-x	+x	+x
E	0.667 - x	0.167 + x	x

$$K_a = 1.8 \times 10^{-5} = \frac{(0.167 + x)(x)}{(0.667 - x)}$$

$x = 7.20 \times 10^{-5}$ pH = 4.14