

$$[H^+] = \underline{1} \times 10^{\underline{-3}} = 10^{-3}$$

$$-\log(10^{-3}) = 3$$

$$[H^+] \rightarrow 2 \times 10^{-3}$$

$$pH = -\log(2 \times 10^{-3}) = 2.70$$

$$pOH = 11.3$$

Apr 26-8:45 AM

$$[OH^-] = 0.0067 \quad pH = ?$$

$$\textcircled{a} \quad pOH = -\log(0.0067)$$

$$pOH = 2.17$$

$$\textcircled{b} \quad pH + pOH = 14$$

$$pH + 2.17 = 14$$

$$pH = 11.83$$

$$\textcircled{a} \quad [H^+][OH^-] = 1 \times 10^{-14}$$

$$[H^+][0.0067] = 1 \times 10^{-14}$$

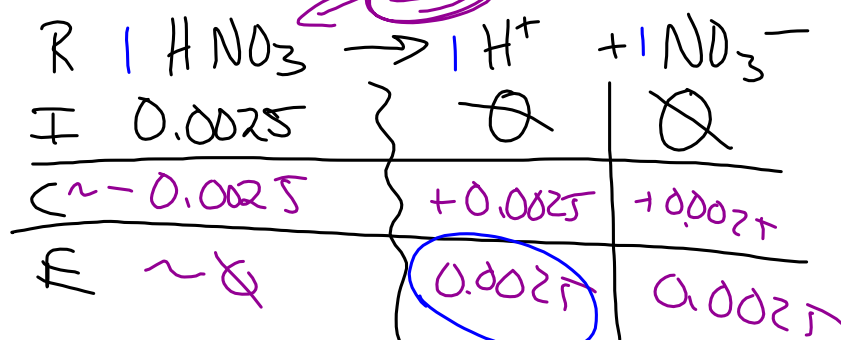
$$[H^+] = 1.49 \times 10^{-12}$$

$$\textcircled{b} \quad pH = -\log([H^+])$$

$$(11.83)$$

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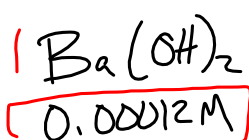
① 0.0025 M HNO_3



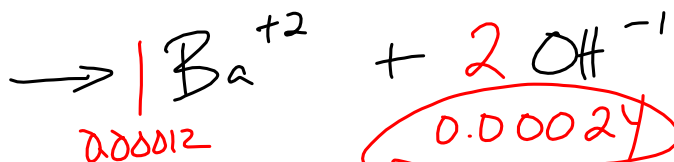
LARGE
 K_a

$$\text{pH} = -\log(0.0025) = 2.60$$

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(SB)
100% dissociates



$$\text{pOH} = 3.62$$

$$\text{pH} = 10.38$$

Apr 26-9:06 AM

(e) $\text{HIO}_3 \rightarrow \text{H}^+ + \text{IO}_3^-$

I	0.0325		
Δ	-x	+x	+x
E	0.0325-x	x	x

MOLE RATIO

$$K_a = \frac{[\text{H}^+][\text{IO}_3^-]}{[\text{HIO}_3]} = \frac{(x)(x)}{0.0325-x} = \frac{1.6 \times 10^{-1}}{1}$$

$x = 7.21 \times 10^{-2} = [\text{H}^+]$
 $\text{pH} = -\log([\text{H}^+]) = 1.14 \text{ pH}$

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(M) Acid - Base indicator

6.0 - 7.6

Yellow - Blue

pH = 4

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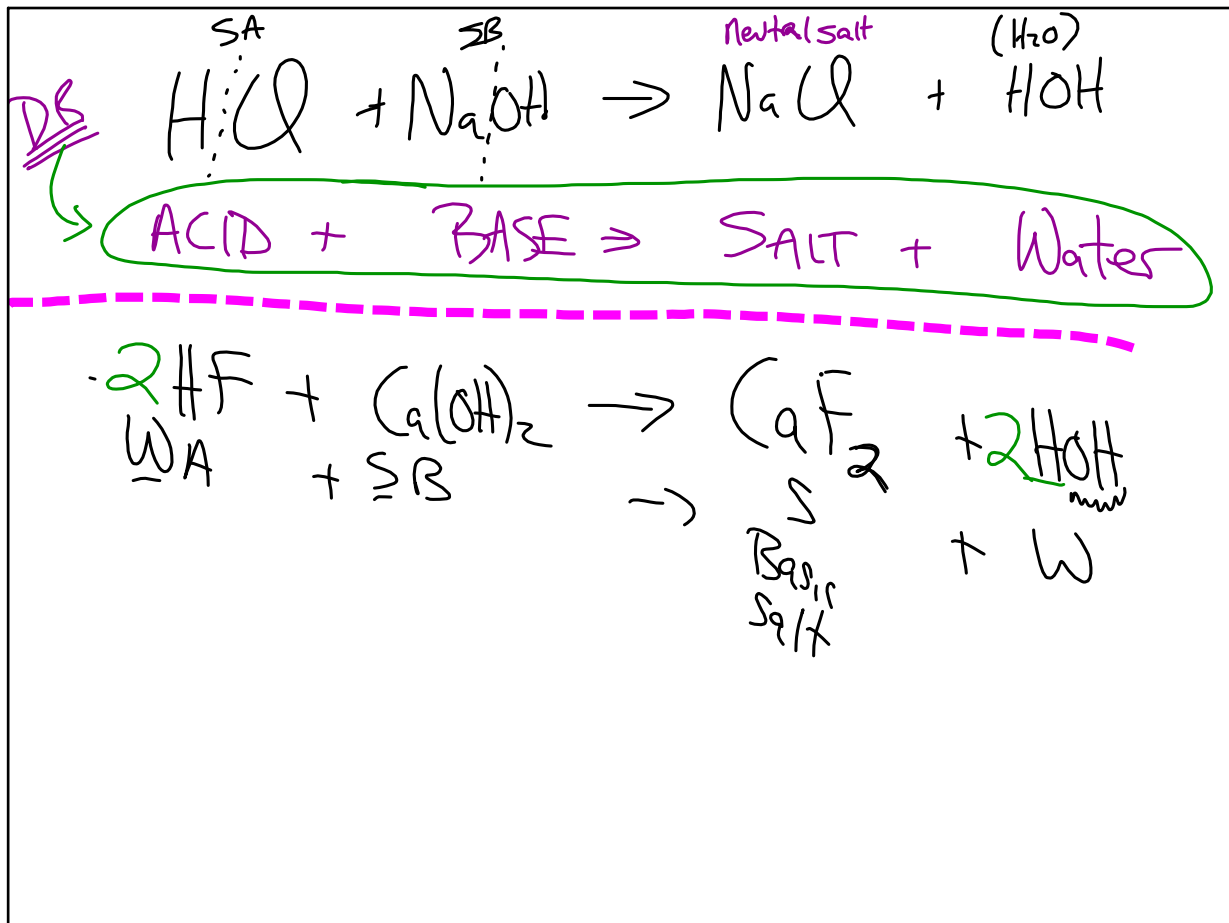
Neutralization / Titration.

Adding Acid to Base

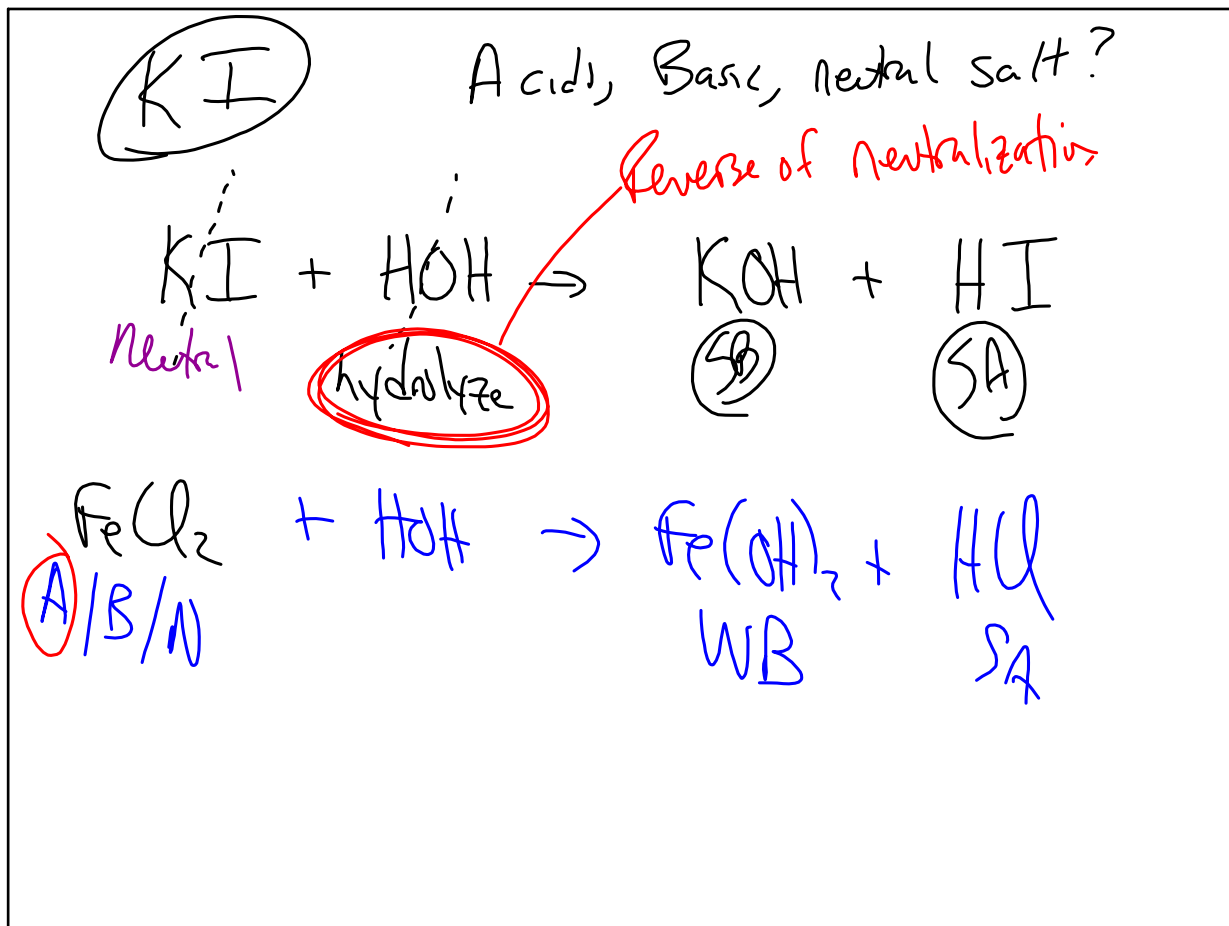
OR
Base to Acid

Bring pH closer to "7"

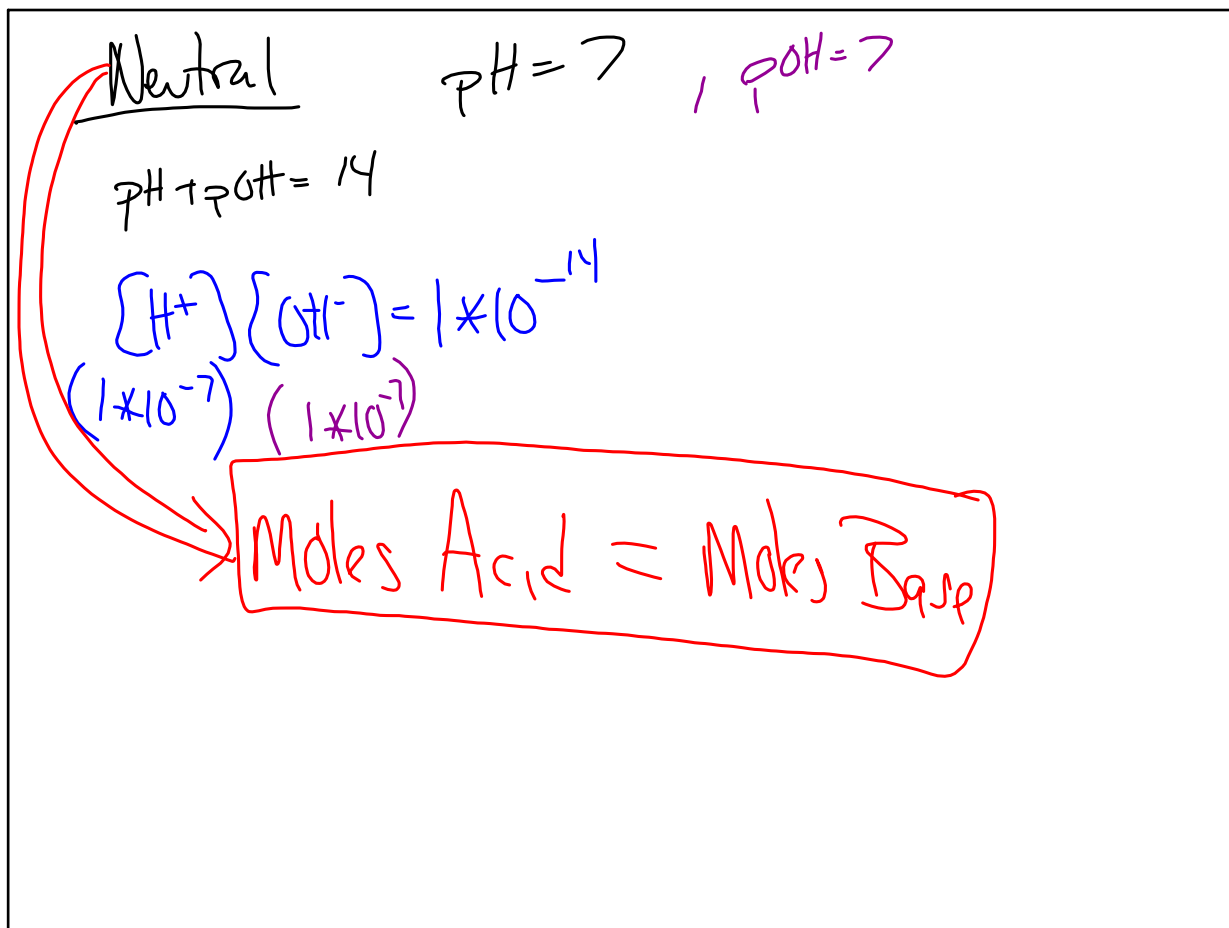
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Apr 26-9:45 AM



Apr 26-9:50 AM

? M 90ml H_3PO_4 + 30ml 0.9M $\text{Ca}(\text{OH})_2$

$$\begin{aligned} \text{mols}_A &= \text{mols}_B \\ n \text{ M l} &= n \text{ M l} \\ 3(\text{M})(90) &= 2(0.9)(30) \end{aligned}$$

Apr 26-9:58 AM