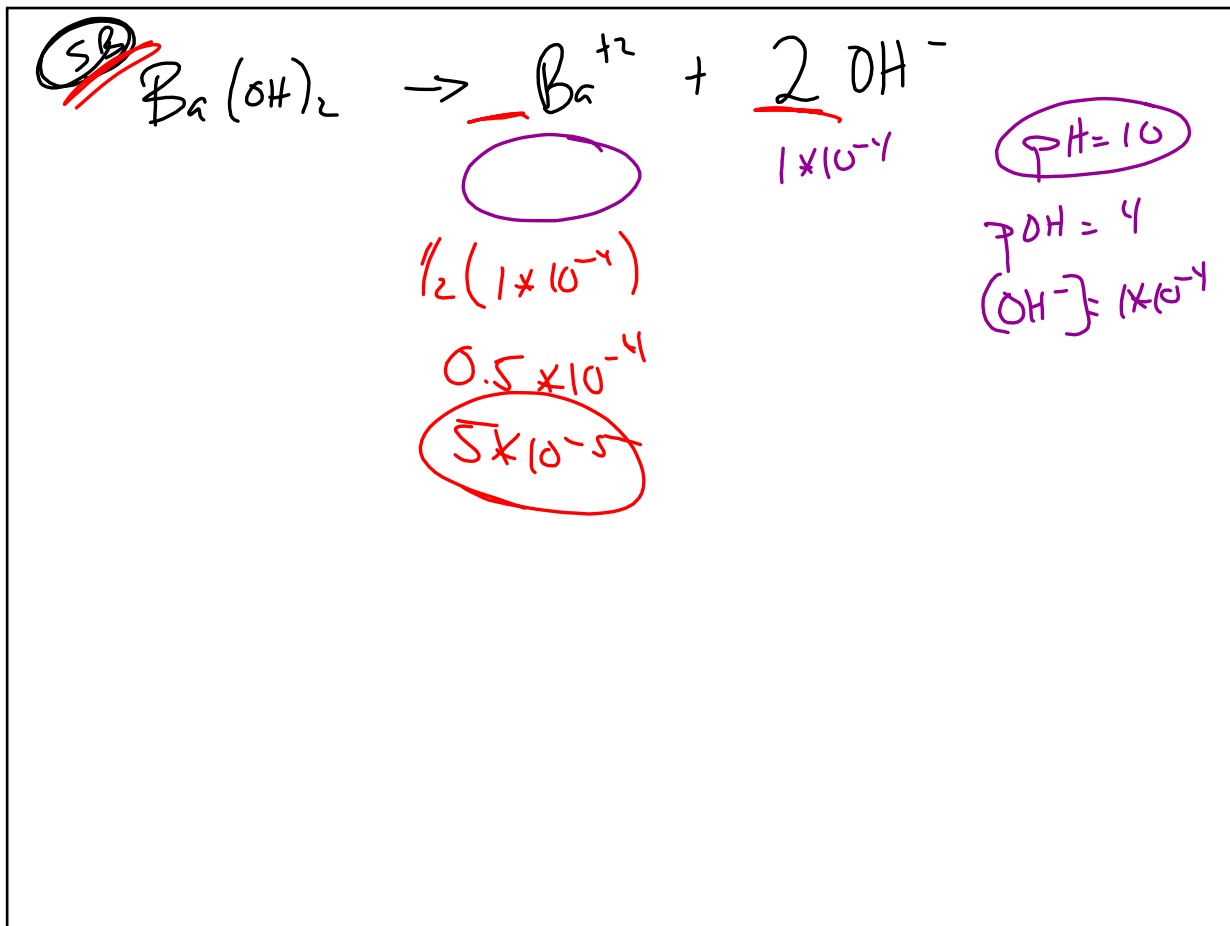


Mar 12-7:55 AM



Mar 12-8:17 AM

(19)  $\text{HF} \rightleftharpoons \text{H}^+ + \text{F}^-$

I	0.01	0	0
D	-x	+x	+x
E	0.01-x	x	0.1+x

$K_a = \frac{x(0.1+x)}{0.01-x} = 1.77 \times 10^{-4}$

$x = 1.77 \times 10^{-5} = [\text{H}^+]$

$\text{pH} = 4.25$

$\frac{1.77 \times 10^{-5}}{0.01} \times 100 = 0.177\% \text{ ionized}$

$\text{pH} = \text{pK}_a + \log \frac{b}{a}$   
 $= -\log(1.77 \times 10^{-4}) + \log \frac{0.1}{0.01}$   
 4.75

Mar 12-8:21 AM

(2) 25 ml 0.147 M  $\text{H Prop}^+$   $K_a = 1.34 \times 10^{-5}$   
 35.3 ml 0.104 M  $\text{KOH}$

Find  $[\text{OH}^-]$

① Next. using Mdes.

$\text{H Prop}^+ + \text{OH}^- \rightarrow \text{Prop}^- + \text{H}_2\text{O}$

I	$3.68 \times 10^{-3}$	$3.68 \times 10^{-3}$	0	0
D	-	-	+	
E	x	x	$3.68 \times 10^{-3}$	

② Recalc M

$0.060310 = 6.1 \times 10^{-2} \text{ M Prop}^-$

③  $\text{Prop}^- + \text{H}_2\text{O} \rightleftharpoons \text{H Prop}^+ + \text{OH}^-$

I	$6.1 \times 10^{-2}$	0	0
D	-x	+x	+x
E	$6.1 \times 10^{-2} - x$	x	x

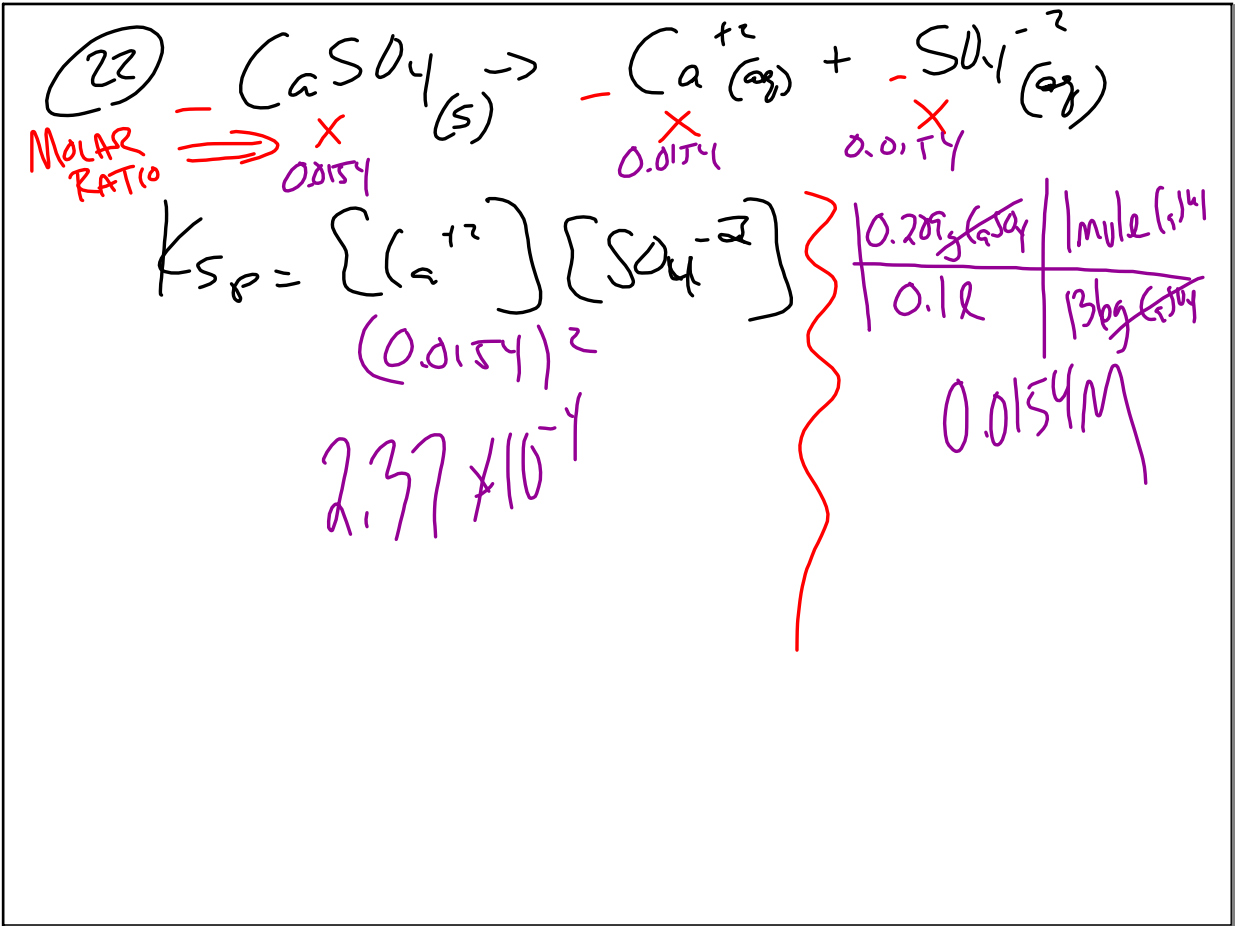
$K_b = \frac{x^2}{6.1 \times 10^{-2}} = 7.46 \times 10^{-10}$

$x = 6.75 \times 10^{-6} = [\text{OH}^-]$

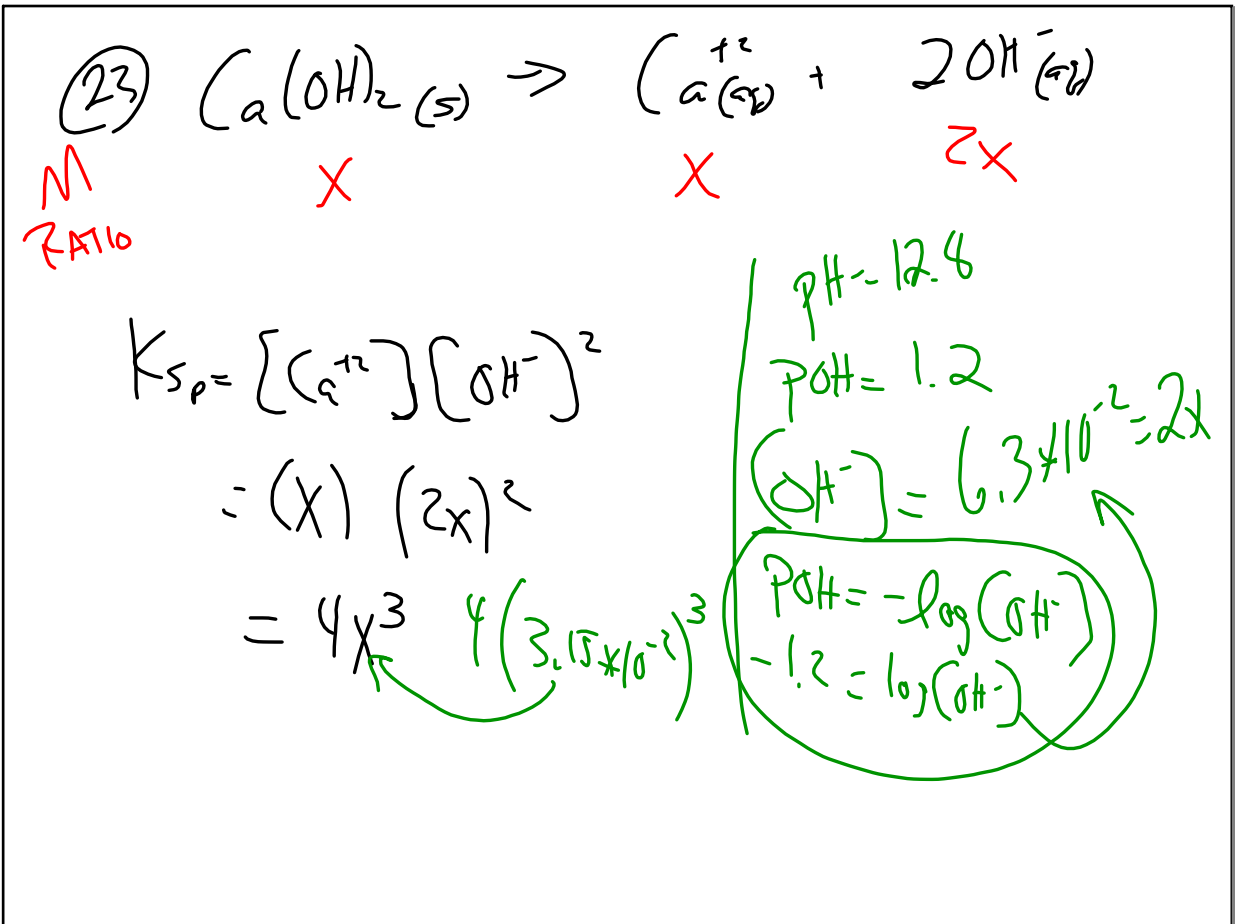
$K_a \times K_b = K_w$   
 $K_a = 1.34 \times 10^{-5}$

nml = nml  
 mdes A = mdes B  
 Equivalence pt.

Mar 12-8:27 AM



Mar 12-8:39 AM



Mar 12-8:43 AM