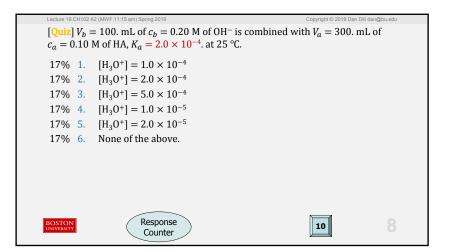
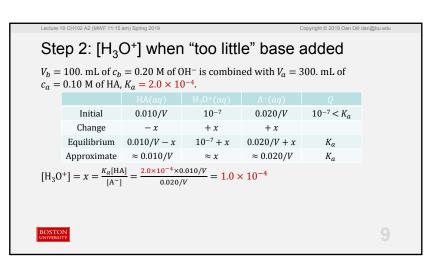
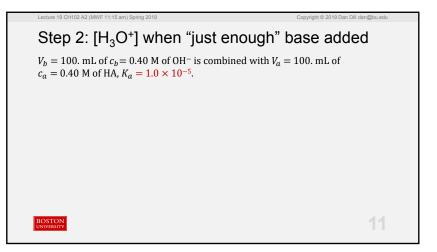


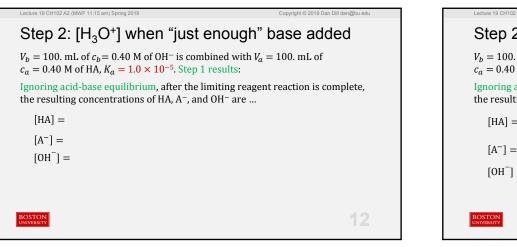
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Ste	ep 2: [H <sub>3</sub> 0	O⁺] wher	n "too littl	e" base a	added	
5	100. mL of <i>c<sub>b</sub></i> 0.10 M of HA			ed with $V_a = 3$	300. mL of	
		HA(aq)	${\rm H}_{3}{\rm O}^{+}(aq)$	A-( <i>aq</i> )		
	Initial	0.010/V	10-7	0.020/V	$10^{-7} < K_a$	
	Change	-x	+x	+ <i>x</i>		
	Equilibrium	0.010/V - x	$10^{-7} + x$	0.020/V + x	Ka	
	Approximate	$\approx 0.010/V$	$\approx x$	$\approx 0.020/V$	Ka	
[H <sub>3</sub> 0	$\mathbf{P}^+] = x = \frac{K_a[\mathbf{H}_a]}{[\mathbf{A}^-]}$	$\frac{A}{A} = \frac{1.0 \times 10^{-4} \times 0}{0.020}$	$\frac{0.010/V}{V} = 5.0 >$	< 10 <sup>-5</sup>		
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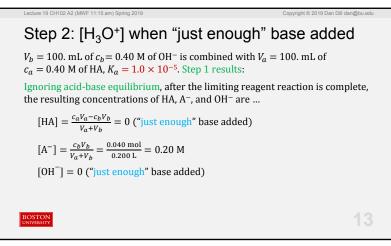


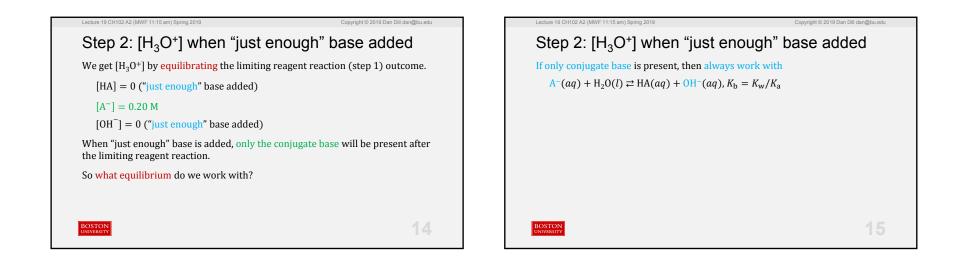




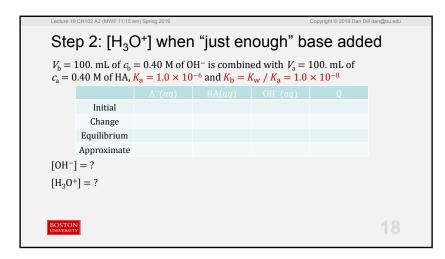








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[TP] Which of the following is true about the a w 0% 1. $K_b \ll 1$ 0% 2. $K_b \approx 1$ 0% 3. $K_b \gg 1$ 0% 4. $K_b \gg K_w$ 0% 5. $K_b \ll K_w$ 0% 6. 1 and 4 0% 7. 1 and 5 0% 8. 1, 4, and 5	eak base?	[Quiz] Which of the following is true about the conjuga acid HA? 0% 1. A <sup>-</sup> is a strong base 0% 2. A <sup>-</sup> is a weak base 0% 3. Not a base, since $K_b \ll K_w$ 0% 4. Further information needed	ıte base A <sup>−</sup> of the weak
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			2	$K_{\rm w} / K_{\rm a} = 1.0$	× 10 <sup>-8</sup>	
Ini	tial	$\frac{1}{0.20}$	HA(aq)	0H <sup>-</sup> (aq) 10 <sup>-7</sup>	$0 < K_{\rm h}$	
	nge	-x	+x	10 +x	$0 < K_{\rm b}$	
	0	20 - x	x	$10^{-7} + x$	Kb	
		≈ 0.20	x	≈ <i>x</i>	Kb	
$OH^{-}] = x =$	$=\sqrt{K_{\rm b}\times[{\rm A}]}$	$-] = \sqrt{1.0 \times 10^{-1}}$	$\times 10^{-8} \times 0.2$	$\overline{0} = 4.5 \times 10^{-10}$	-5	
(1 0+1) = V	/ [0H-] -	1.0×10 <sup>-14</sup>	$2.2 \times 10^{-10}$	)		