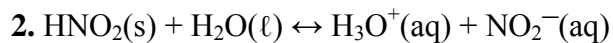


CHAPTER 17	Determining the pH of Buffer Solutions Answer Key	BLM 17.4.4A
ANSWER KEY		

1.  $[\text{HNO}_2] = 0.25 \text{ mol/L}$ ;  $[\text{NO}_2^-] = 0.25 \text{ mol/L}$



3.



	$[\text{HNO}_2(\text{s})]$ (mol/L)	$[\text{H}_2\text{O}(\ell)]$ (mol/L)	$[\text{H}_3\text{O}^+(\text{aq})]$ (mol/L)	$[\text{NO}_2^-(\text{aq})]$ (mol/L)
Initial	0.25			0.25
Change	$-x$		$x$	$+x$
Equilibrium	$0.25 - x$		$x$	$0.25 + x$

4.  $K_a = \frac{[\text{H}_3\text{O}^+][\text{NO}_2^-]}{[\text{HNO}_2]}$

5.  $x = 5.6 \times 10^{-4}$

6.  $\text{pH} = 3.25$