

## pH of weak acids

1.	Balanced equation.	Answers:	1.	$[\text{H}_3\text{O}^+] = 0.00235 \text{ mol/L}$	$pH = 2.629$
2.	ICE table		2.	$[\text{H}_3\text{O}^+] = 7.62 \times 10^{-6} \text{ mol/L}$	$pH = 5.118$
3.	$K_a$ expression		3.	$[\text{H}_3\text{O}^+] = 1.70 \times 10^{-5} \text{ mol/L}$	$pH = 4.769$
4.	Check $\frac{[\textit{weak acid}]}{K_a}$		4.	$[\text{H}_3\text{O}^+] = 5.17 \times 10^{-4} \text{ mol/L}$	$pH = 3.287$
5.	Substitute and solve				

Calculate the  $[\text{H}_3\text{O}^+]$  and the pH of a:

1. 0.0100 mol/L  $\text{HNO}_{2(\text{aq})}$  solution.

2. 0.100 mol/L  $\text{H}_3\text{BO}_{3(\text{aq})}$  solution.

3. 0.500 mol/L  $\text{H}_3\text{BO}_{3(\text{aq})}$  solution.

4. 0.00200 mol/L  $\text{HCOOH}_{(\text{aq})}$  solution.