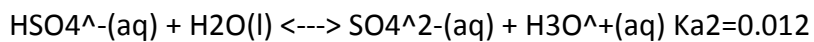
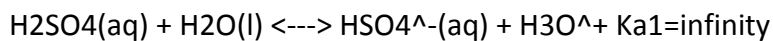
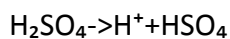


## Answer on Question #67224, Chemistry / General Chemistry

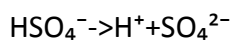
Determine the pH of a 0.100 M solution of sulfuric acid, H<sub>2</sub>SO<sub>4</sub>. Remember that only the first proton of H<sub>2</sub>SO<sub>4</sub> is truly a strong acid, while the second proton has an acid equilibrium constant Ka<sub>2</sub>=0.012.



Answer



$$[\text{H}^+] = C = 0.1 \text{ Mol/L}$$



$$d = \sqrt{0.012 \cdot 0.1} = 0.346$$

$$[\text{H}^+] = C_d \cdot N = 0.1 \cdot 0.346 \cdot 1 = 0.0346 \text{ mol/L}$$

$$[\text{H}^+] = 0.1 + 0.0346 = 0.1346 \text{ MOL/L}$$

$$\text{pH} = -\lg[\text{H}^+] = -\lg 0.1346 = 0.87$$

Answer provided by <https://www.AssignmentExpert.com>