



$$K = \frac{[\text{Products}]}{[\text{Reactants}]} = \frac{x^2}{[0.00600-x]}$$

Rule of 500  
 $\frac{0.00600}{1.7 \times 10^{-1}} = < 500$

$$1.7 \times 10^{-1} = \frac{x^2}{[0.00600-x]}$$

$$1.7 \times 10^{-1} [0.00600-x] = x^2$$

$$0.00102 - 1.7 \times 10^{-1}x = x^2 + 1.7 \times 10^{-1} - 0.00102$$

$$-b \pm \sqrt{b^2 - 4ac} = \frac{-1.7 \times 10^{-1} \pm \sqrt{(1.7 \times 10^{-1})^2 - 4(1)(-0.00102)}}{2(1)}$$

$$= \frac{-1.7 \times 10^{-1} \pm 0.182}{2} \quad \checkmark = \begin{matrix} -0.006 \\ -0.176 \end{matrix} \text{Reject!}$$

$$[\text{H}_3\text{O}^+] = 0.00600 \text{ mol/L}$$

$$\text{pH} = -\log(\text{H}_3\text{O}^+) = -\log(0.0060) = 2.22$$

$$\text{pOH} = 14 - 2.22 = 11.78 \quad \checkmark$$

$$[\text{OH}^-] = 10^{-\text{pOH}} = 10^{-11.78} = 1.66 \times 10^{-12} \rightarrow 1.7 \times 10^{-12}$$

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