

Name _____

Solving the Concentration of Hydrogen Ions Answer Key

1. The pH value is 3 ($\text{pH} = -\log[\text{H}^+]$).
2. The concentration of hydroxide ions is 0.5 M.
3. The concentration of hydrogen ions is 1×10^{-9} M.
4. 3.65 grams of HCl are needed ($\text{mass} = \text{molarity} \times \text{volume} \times \text{molar mass}$).
5. The pOH value is 5 ($\text{pOH} = -\log[\text{OH}^-]$).
6. The percent ionization is 80% ($\text{percent ionization} = (\text{equilibrium concentration} / \text{initial concentration}) \times 100$).
7. The pH is 11 ($\text{pH} + \text{pOH} = 14$).
8. 0.125 moles of H_3PO_4 are present ($\text{moles} = \text{molarity} \times \text{volume}$).
9. The pOH value is 12 ($\text{pOH} = -\log[\text{OH}^-]$).
10. The concentration of H^+ ions is 0.01 M (H^+ concentration = $10^{(-\text{pOH})}$).