Competition Corner: Logarithm Boundaries

g10_u05_w18

Use the 25 °C model only when stated; distinguish arithmetic from strength, concentration, and safety claims.

1. At 25 °C, compare pH for $[H_3O^+] = 6.3 \times 10^{-3}$ M and 6.3×10^{-5} M. Explain the two-unit pH difference.
2. A sample has pH 4.25. Calculate hydronium concentration, then identify its pOH in the stated model.
3. Critique: "A pH 2 solution is twice as acidic as pH 4." Replace it with a logarithm-aware statement.
4. Give an example showing why a higher concentration label cannot alone establish acid strength.
5. Design an evidence checklist for reporting pH from a data card.