

Competition Corner: Capstone Claim Audit

Optional Extension | g10_u09_w36

Use only the fictional cards: $3A \rightarrow 2B$ with 0.90 mol A; $\Delta H = -30$ kJ; fixed-condition G rate pair 0.20 to 0.40 M and 5.0 to 10.0 units; $Q = 0.25$, $K = 1.0$; pH 5.00; and $E_{\text{cell}}^{\circ} = +0.70$ V. Reflection cites evidence, not personal information.

1. Compute the fraction of supplied A represented by predicted B, 0.60/0.90, and name the equation-ratio boundary.
2. The energy card gives -30 kJ once. What does it give for three stated reaction amounts, under the proportional-card assumption?
3. Sort these statements by evidence type: an amount prediction, a direction comparison, and a potential calculation. Explain why none replaces the others.
4. Write an evidence-based reflection sentence that revises E1 or E3 without referring to a person.

Key. 1. 2/3; it is a coefficient-ratio result for this printed equation card only. 2. -90 kJ, assuming the idealized proportional card. 3. Ratio card, Q/K card, and cell-potential card; each answers a different model question and none supplies safety, rate, or real-outcome evidence. 4. Example: $Q < K$ supports a product-direction label but not a claim about how quickly equilibrium is reached.