

Competition Corner: Claim Audit

g11_u01_w01 | supplied paper data only

Boundary: These are fictional data cards. Diagnose quantities and claims; do not plan or perform a measurement.

1. Two teams report 0.250 L and 250. mL for the same model volume. Explain why their numbers are compatible, then state whether the two displays imply the same smallest increment after conversion. The terminal decimal in 250. mL is intentional.
2. A model result is 0.004980 g, derived from 1.20 mL and $0.00415 \text{ g mL}^{-1}$. Calculate the product, report it correctly, and explain why extra calculator digits should not become evidence.
3. A data set has readings 9.98, 10.00, and 10.02 g against a 10.00 g reference. Compare mean, range, and signed mean error. What can be concluded and what remains uncertain?