Calibration Linear Regression — Student Practice

LAB REPORT & DATA QUALITY / PRACTICE

Name: _____ Date: _____

Show units and work. State assumptions and reporting precision. Leave enough space for each explanation.

1. **A calibration has x=0,1,2,3,4 mmol/L and absorbance y=0.010,0.217,0.421,0.633,0.839 AU. Use least squares to find the slope and intercept.**

2. **With the fit from problem 1, estimate concentration of a sample at absorbance 0.523 AU.**

3. **A fit gives y=0.050x+0.020. What x corresponds to y=0.270?**

4. **Explain the difference between a calibration residual and the regression intercept.**

5. **Why is R^2=0.999 not proof that a calibration is unbiased or accurate?**

6. **A sample absorbance exceeds the highest standard. Explain the appropriate response.**