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**Q1: In the context of a dataset (real or made up), describe the inherent conflict between using a complicated model that minimizes the unexplained variation and using a simple model that is easy to communicate.**

**Q2: Which of the following predictor variables had slope coefficients that were significantly different from zero at a 95% confidence level? Select the correct answer(s)**

1. **water**
2. **nitrogen**
3. **phosphorus**
4. **None**

**Q3: Using the information in the model coefficient table above, calculate the expected biomass for a plant given:**

* **0 mL water per week**
* **0 mg nitrogen per week**
* **0 mg phosphorus per week**

**Explain how you made the calculation.**

**Q4: Using the information in the model coefficient table above, what is the expected biomass for a plant given:**

* **10 mL water per week**
* **30 mg nitrogen per week**
* **20 mg phosphorus per week**

**Explain how you made the calculation.**

**Q5: Describe the key difference between a simple linear regression and a 1-way analysis of variance. Consider the data types/scales of the predictor and response variables.**

We often present the equation for a simple linear regression model as:

yi=α+β1xi+ϵ

**Q7: Identify the *deterministic* component(s) of the model equation.**

**Q8: Identify the *stochastic* component(s) of the model equation.**