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Week 10 Reading Questions

1) We want model selection criterion to penalize the number of parameters in a model because it is related to bias-variance trade-off, the more complex the bias decreases and the variance increases. This also can lead to the quality of our inferences becoming worse. The penalizing criterion creates a model that can show its weaknesses to help select the correct model
2) The relationship between B in the context of the predictor value and response value is, for every 1 (unit/size) change in x we expect a b change in y (on average). This can be simplified to explain slope. For example, say you put $500 (x) into a savings account in 2000, there is no original interest so the total would be $500 (y). Each year the savings account interest rate is 2%, you would use this to find the rate of change on your initial value each year (beta). After adding the interest amount to the initial value, you have a new amount in the bank(y). This example shows how the initial values represent the predictor value, interest rate as the beta value, and final amount as the response variable.
3) The base case of water treatment is 2.4 which is waterlow.
4) The average plant mass for low water treatment is 2.4 grams, this is just the intercept because we are looking at how plant mass changes with more treatment.
5) The average plant mass for medium water treatment is 3.7 grams, this is the intercept + the waterMed because the low water treatment (intercept) increases by 1.3 grams each waterMed unit.
6) The only question that can't be addressed by the model coefficient table is B, this could be answered using the ANOVA table.