Week 2 Reading Guide – Part 1

## Chapter 5: Cross Validation

1. What is the purpose of cross-validation?
2. Why are the curves in Figure 5.2 (right hand side) so variable?
3. Describe to someone what leave-one-out cross validation is.

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| Tip |
| You can assume the person is familiar with linear regression. Your description should address the following questions:   * What data are used when fitting the model? * What is calculated about each model? * How many models are fit? |

1. Why does LOOCV have less bias than the validation approach?
2. In what scenarios is LOOCV too “expensive” to implement?
3. LOOCV is a special case of k-Fold cross validation when k is set to \_\_\_.
4. What are “typical” choices of k in k-Fold CV?
5. Which method (LOOCV or k-Fold CV) has higher bias? Why?
6. Which method (LOOCV or k-Fold CV) has higher variance? Why?