Problem Set 3 - POLS6394

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Problem Set 3

#Chapter 6

4. a. iii - In order to minimize the equation with increasing lambda, the B coefficients must converge to 0.

b. ii - Decrease then increase. With lamba = 0, test RSS is high because of overfitting. As lambda increases overfitting is reduce to a point until the increased shrinkage becomes inefficient.

c. iv - As lambda increases, the B coefficients converge on zero. All betas = 0 is essentially a horizontal line with no variance.

d. iii - Increasing lambda decreases flexibility, which increases bias.

e. v - irreducible error is a horizontal line, a constant, that can not be improved regardless of model fit.

```
College <- read.csv("C:/R Studio Files/POLS6394-Machine-Learning/Problem Set 3/College.csv")
View(College)

train.size = dim(College)[1] / 2
train = sample(1:dim(College)[1], train.size)
test = -train
Train.college = College[train, ]
Test.college = College[test, ]
```