

hw03

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Problem 1

1(a)

```
## KNN N-Fold CV K Performances (R Squared):  
##  
## Best K: 8  
##  
## - K = 6 : 0.5674  
## - K = 8 : 0.5868  
## - K = 10 : 0.5843  
## - K = 12 : 0.5769
```

Pros of N-Fold CV:

- Lower bias since the model is trained on the entire data set
- No randomness since we are taking one row at a time instead of a random selection of rows
- Will not overestimate test error rate

Cons of N-Fold CV:

- Computational expense

1(b)

```
## Prediction Error Standard Deviation (RMSE): 0.5363876
```

1(c)

```
## Cost prediction: 2396.013
```

Problem 2

2(a)

2(b)

2(c)

Problem 3

3(a)

3(b)

3(c)

3(d)

Question 4

4(a)

4(b)

4(c)

Problem 5

5(a)

5(b)

5(c)

Problem 6

6(a)

6(b)

6(c)

Problem 7

7(a)

7(b)

7(c)

7(d)

7(e)

7(f)

7(g)