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HW6

4.a.
10% which means when $X < 0.05$ or $X > 0.95$, we can not predict them.

b.
10% * 10% = 1%

c.
10%^100

d.
As p increases, training observations “near” any given test observation will decrease exponentially.

e.
p=1 length = 0.1
p=2 length = 0.1^(1/2)
p=100 length = 0.1^(1/100)

11.b.
Correlated with cylinders, weight, displacement, horsepower.

d.
12.6% test error of the model obtained.

e.
13.2% test error of the model obtained.

f.
12.1% test error of the model obtained.

g.
With different k, test error of the model obtained as follows:
k=1 15.38%
k=2 14.83%
k=5 14.83%
k=10 15.38%
k=100 15.93%
k=2 and k=5 seems perform the best on this data set.