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### STA 141C HW 3 Report

#### **Problem 1:**

At iteration 10 the objective is 54880.86435385703

At iteration 20 the objective is 54501.74722947282

At iteration 30 the objective is 54498.68881728165

At iteration 40 the objective is 54498.68881728165

Time: 40.7695679665

As we can see the objective function is decreasing with each iteration and it eventually converges. It begins to decrease quickly for the first few iterations and then slows down as it reaches the convergence point.

#### **Problem 2:**

At iteration 10 the objective is 195.6541461792451

At iteration 20 the objective is 168.5324116943875

At iteration 30 the objective is 163.34136455279148

At iteration 40 the objective is 162.57980117954529

Time: 354.977845907

Like Problem 1 the objective function decreases quickly and slows down as it reaches the convergence point.