Business Analytics Homework

**Question 1**

More than 46,000 farms spread across 8.4 million acres of land in NC State, with average farm size ringing in at 182 acres. A farmer in Hendersonville owns 50 acres of land. He is going to plant each acre with Apples or Pumpkins. Each acre planted with Apples yields $400 profit; each with Pumpkins yields $200 profit. The labor and fertilizer used for each acre are given in the table below. Resources available include 150 workers and 200 tons of fertilizer.

|  |  |  |
| --- | --- | --- |
|  | Apples | Pumpkins |
| Labor (workers) | 5 | 3 |
| Fertilizers (Tons) | 6 | 2 |

Using SAS Code to run an optimization problem and print output decision variables, objective function Z, and constraints solutions. **You need to provide your Code on a separate file called it SAS\_Problem1.sas.**

**Question 2**

Using ONLY SAS Code to run an optimization problem and print output decision variables, objective function Z, and constraints solutions. **Code on a separate file called it SAS\_Problem3.sas**

A boutique chocolatier -Lafayette Village Raleigh has two most sellable products: Its flagship assortment of triangular chocolates, called Pyramid, and the more decadent and deluxe Pyramid Nut and Caramel.

How much of each should it produce to maximize profits? Every box of pyramided has a profit of $1. Every box of Nut and Caramel has a profit of $6. The daily demand is limited to at most 200 boxes of pyramided and 300 boxes of Nut and Caramel. The current workforce can produce a total of at most 400 boxes of chocolate per day. Let x1 be # of boxes of pyramided, x2 be # of boxes of Nut and Caramel.