Facility Location 1 Exercise

(1/1 point)

Suppose that students are not required to dine, and let v_s be the number of such students. If a student at location s chooses not to dine, then the disutility for that student is g_s. How would the model change if this possibility were permitted? Select one objective and two constraints.

- [x] New objective: $\sum_{d \in D} f_d y_d + \sum_{s \in S} \sum_{d \in D} c_{sd} x_{sd} + \sum_{s \in S} g_s v_s$ ✔
- [ ] New objective: $\sum_{d \in D} f_d y_d + \sum_{s \in S} \sum_{d \in D} c_{sd} x_{sd} - \sum_{s \in S} g_s v_s$
- [x] New constraint: $\sum_{d \in D} x_{sd} + v_s = n_s \text{ for } s \in S$ ✔
- [ ] New constraint: $\sum_{d \in D} x_{sd} + v_s \leq n_s \text{ for } s \in S$
- [ ] New constraint: $\sum_{d \in D} x_{sd} + v_s = n_s \text{ for } d \in D$
- [ ] New constraint: $v_s \geq 0 \text{ for } d \in D$

☑ New constraint: $v_s \geq 0$ for $s \in S$ ✔

✔

EXPLANATION

Solution

The correct answer is:

- New objective: $\sum_{d\ in D} f_d y_d + \sum_{s \in S} \sum_{d \in D} c_{sd} x_{sd} + \sum_{s \in S} g_s v_s$. We are minimizing, and so we should add the disutility.
- New constraint: $\sum_{d \in D} x_{sd} + v_s = n_s$ for $s \in S$. For each location $s \in S$, v_s is equal to the number of students at location s who do not dine at one of the facilities.
- New constraint: $v_s \geq 0$ for $s \in S$.

You have used 2 of 2 submissions