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▼ Week 1

Lecture 1

Lecture questions due Sep 13, 2016 at 19:30 IST

**Recitation****Problem Set 1**

Homework due Sep 13, 2016 at 19:30 IST



Week 1 > Lecture 1 > Diet Problem Exercise



Bookmark

Cost of Eating

(1/1 point)

Suppose we wish to minimize the amount of calories consumed in one week.

Suppose further that we wish to spend **no more than D** dollars on eating in one week.

- n : number of different foods
- z : Total number of calories consumed in one week
- A : Number of dollars spent in one week
- c_j : Number of calories in one unit of food j
- x_j : Number of units of food j consumed in the week
- p_j : Cost of one unit of food in dollars j

Which of the following represents the constraint on cost?

☐ $\sum_{j=1}^n p_j x_j \geq D$

☐ $\sum_{j=1}^n x_j \leq p_j$

☐ $\sum_{j=1}^n p_j x_j = D$

☐ $\sum_{j=1}^n x_j \geq p_j$

☒ $\sum_{j=1}^n p_j x_j \leq D$ ✓

EXPLANATION

Solution

The correct answer is: $\sum_{j=1}^n p_j x_j \leq D$

The left hand side in the above represents the cost and we want it to be $\leq D$

You have used 1 of 1 submissions

Calories as an Objective

(1/1 point)

Which of the following represents the objective on calories?

☐ $\text{MAX } z = \sum_{j=1}^n c_j x_j$

☐ $\text{MIN } z = \sum_{j=1}^n c_j p_j$

☐ $\text{MAX } z = \sum_{j=1}^n p_j x_j$

☐ $\text{MIN } z = \sum_{j=1}^n p_j x_j$

☒ $\text{MIN } z = \sum_{j=1}^n c_j x_j$ ✓

EXPLANATION

Solution

The correct answer is: $\text{MIN } z = \sum_{j=1}^n c_j x_j$

The weekly calories, z , a sum product of amount of food and calories per food per week, should be minimized.

You have used 1 of 1 submissions

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