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Lecture
Lecture questions due Oct 04, 2016 at 19:30 IST

Recitation

Problem Set 4
Homework 4 due Oct 04, 2016 at 19:30 IST

Fixed Charge Problems Exercise

(1/1 point)

Consider the DTC problem in which S shields and K slingshot kits are produced, and suppose the fixed costs for making these are 10 and 5, respectively. Recall that the original objective was $3S + 5K$, with demands of 30 and 40 for shields and slingshot kits, respectively. Let w_1, w_2 be binary variables equal such that

- $w_1 = 1$ if there is a setup for shields
- $w_1 = 0$ otherwise no setup for shields
- $w_2 = 1$ if there is a setup for slingshot kits
- $w_2 = 0$ otherwise no setup for slingshot kits

Determine the new objective and constraints necessary for modeling the fixed charge

- [x] MAX $y_1 + y_2$ ✔

- [x] $y_1 = -10w_1 + 3S$ ✔
  $0 \leq S \leq 30w_1$

- [x] $y_2 = -5w_2 + 5K$ ✔
  $0 \leq K \leq 40w_2$
- [ ] MIN $y_1 - y_2$
- [ ] $y_1 = -10w_1 + 3S$
  $0 \leq S \leq w_1$
- [ ] $y_2 = 5w_2 + 5K$
  $0 \leq K \leq w_2$
- [ ] MIN $y_1 + y_2$
- [ ] $y_1 = 10w_1 + 3S$
  $0 \leq S \leq w_1$
- [ ] $y_2 = 5w_2 + 5K$
  $0 \leq K \leq 100w_2$

✔

SOLUTION

- MAX $y_1 + y_2$

- $y_1 = -10w_1 + 3S$
  $0 \leq S \leq 30w_1$
- $y_2 = -5w_2 + 5K$
  $0 \leq K \leq 40w_2$

You have used 1 of 3 submissions