

Assignment (1)

Use Excel to find the optimal solution to the following nonlinear problems:

1. Minimize costs = $X_1 - 3 X_2 + 2 X_2^2 - 5 X_3 + 2 X_1 X_2 + 3 X_3^2 + 2 X_2 X_3$
 Subject to $X_1 + X_2 + X_3 \geq 1$
 $3 X_1 + 2 X_2 + X_3 \leq 6$
 $X_1, X_2, X_3 \geq 0$

$X_1 = \dots\dots\dots$, $X_2 = \dots\dots\dots$, $X_3 = \dots\dots\dots$, and costs = $\dots\dots\dots$

2. Maximize profit = $4 X_1 + 6 X_2 - 2 X_1^2 - 2.5 X_1 X_2 - 2 X_2^2$

$X_1 = \dots\dots\dots$, $X_2 = \dots\dots\dots$, and profit = $\dots\dots\dots$

3. Minimize costs = $(X_1 - 2)^2 + 4 (X_2 - 6)^2$
 Subject to $6 X_1 + 3 X_2^2 + 6 X_2 \leq 9$
 $X_1, X_2 \geq 0$

$X_1 = \dots\dots\dots$, $X_2 = \dots\dots\dots$, and costs = $\dots\dots\dots$

Deadline: Thursday 23/4/1436 H (12-2-2015)

To be submitted before 12:30 pm at my office (70-C / building 7)