



IE 454 Combinatorial Analysis

<http://ie454.cankaya.edu.tr>

Fall 2010 Tuesday 9:40-12:30 A201

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Voice: 189 Dean's office

**Department of
Industrial Engineering**

Name:

Surname:

Date: 07.12.2010

I hereby declare that I have neither given nor received any aid during the exam.

I accept

I decline

Signature:

QUIZ 2: Open notes! Duration:30 min.

Use DP to solve the following 3-period production planning problem. Let the beginning inventory level be 1.

| Stage | Month | Demand | Production Capacity | Storage Capacity | Unit Production Cost | Unit Holding Cost |
|-------|----------|--------|---------------------|------------------|----------------------|-------------------|
| 3 | January | 3 | 3 | 2 | 280 | 35 |
| 2 | February | 2 | 2 | 3 | 300 | 40 |
| 1 | March | 4 | 4 | 3 | 325 | 45 |

| x_1 | d_1 | $f_1(x_1)$ |
|-------|-------|------------|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

| x_2 | 0 | 1 | d_2 | | | d_2^* | $f_2(x_2)$ | x_1 |
|-------|---|---|-------|---|---|---------|------------|-------|
| | | | 2 | 3 | 4 | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

| x_3 | 0 | 1 | d_3 | | | d_3^* | $f_3(x_3)$ | x_2 |
|-------|---|---|-------|---|---|---------|------------|-------|
| | | | 2 | 3 | 4 | | | |
| | | | | | | | | |
| | | | | | | | | |

The summary in box notation: