

# ISE 453 CASE STUDY 1

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## QUESTION 8.2 - *UFLP*

1. Optimal Locations:
  - Facility 1 Open
  - Facility 8 Open
  - Facility 9 Open
2. Optimal Assignments:
  - Facility 1 covers Facilities: 1
  - Facility 8 covers Facilities: 2, 4, 6, 7, 8
  - Facility 9 covers Facilities: 3, 5, 9
3. Optimal Cost: \$1,112.52

## QUESTION 8.5 - *PMP*

1. Optimal Locations:
  - Facility 1 Open
  - Facility 7 Open
  - Facility 8 Open
  - Facility 9 Open
2. Optimal Assignments:
  - Facility 1 covers Facilities: 1
  - Facility 7 covers Facilities: 2, 4, 7
  - Facility 8 covers Facilities: 6, 8
  - Facility 9 covers Facilities: 3, 5, 9
3. Optimal Cost: \$342.35

## QUESTION 8.8 - *SCLP*

1. Optimal Locations:
  - Facility 1 Open
  - Facility 2 Open
  - Facility 5 Open
  - Facility 6 Open
  - Facility 7 Open
  - Facility 9 Open
2. Optimal Assignments:
  - Facility 1 covers Facilities: 1
  - Facility 2 covers Facilities: 2

- Facility 5 covers Facilities: 5
- Facility 6 covers Facilities: 6, 8
- Facility 7 covers Facilities: 4, 7
- Facility 9 covers Facilities: 3, 9
- 3. Minimal Number of Facilities to Open: 6

### **QUESTION 8.9 - *MCLP***

- 1. Optimal Locations:
  - Facility 1 Open
  - Facility 3 Open
  - Facility 5 Open
  - Facility 6 Open
- 2. Optimal Assignments:
  - Facility 1 covers Facilities: 1
  - Facility 3 covers Facilities: 3, 9
  - Facility 5 covers Facilities: 5
  - Facility 6 covers Facilities: 6, 7, 8
- 3. Total Demand Covered: 348