

Solve the following Problems:

Problem #1

(5 Points)

- (a) List 5 components of a football stadium facility
- (b) List 5 Applications of Facilities Planning
- (c) Explain the Facilities Planning Hierarchy with a simple drawing
- (d) How can the facility location problems be classified?
- (e) What are the reasons for considering Location Problems

Problem #2

(15 Points)

1. The city council of Fayetteville has decided to locate an emergency response unit within the city. This unit is responsible for four housing sectors (A) and three major street intersections (P) as shown in the figure below. Assume that the weights are uniformly distributed over the housing sectors.
 - a. Determine the minimum location based on the weights given in the table below, assuming no restrictions apply to the location of the emergency response unit.
 - b. Determine the minimum location assuming the new facility cannot be located within a housing sector.
 - c. Determine the minimax location by measuring distances to the centroids of areas and using the weights given in the table below.

Housing Sector	Weight	Intersection	Weight
A_1	10	P_1	30
A_2	15	P_2	15
A_3	20	P_3	5
A_4	30		

