BAR-ILAN UNIVERSITY
TOPICS IN SUPPLY CHAIN MANAGEMENT
SESSION 2

OPTIMAL GEOGRAPHICAL LOCATION:
APPLICATIONS

Problem 1:

An important pharmaceutical company wants to build a new warehouse to supply the western United States market. Three potential locations were selected. Factors, weights and relative scores are given in the table below.

Factor	Weight	Score		
		Peoria	**Des Moines**	**Chicago**
Closeness to Market	20	4	7	5
Labour cost	5	8	8	4
Taxes	15	8	9	7
Closeness to suppliers	10	10	6	10

Which location do you suggest?

Problem 2:

Audiard Company wants to set up a factory in one of three cities: Waco (Texas), Tijuana (Mexico) and Podunk (Arkansas). For each potential location, the following parameters have been estimated.

Locations	Fixed Costs	Variables Costs
Waco, Texas	$300,000	$5.75
Tijuana, Mexique	$800,000	$2.75
Podunk, Arkansas	$100,000	$8.00

Determine the sales volumes associated with each potential location.

Problem 3 :

The Regional Postal Center in Tampa, Florida, needs to be replaced by a larger, more modern facility to handle the huge stream of mails following urban development since 1970. Given that all incoming and outgoing mails passing through the 7 Post offices in Tampa pass through the Regional Postal Center, the choice of the new site can result in a substantial change in flow movements. Using the data in the following table, determine the coordinates of the new site.

Post Offices	Coordinates (x, y)	Number of travels per day
Ybor City	(10, 5)	3
Davis Island	(3, 8)	3
Dale-Mabry	(4, 7)	2
Palma Cela	(15, 10)	6
Bayshore	(13, 3)	5
Temple Terrace	(1, 12)	3
Hyde Park	(5, 5)	10

Problem 4 :

The following table provides the coordinates and the loads transported for a set of locations wishing to be connected to a central site. What are the coordinates of the central site to which the locations should be located?

Locations	Coordinates (x, y)	Loads transported
A	(5, 10)	5
B	(6, 8)	10
C	(4, 9)	15
D	(9, 5)	5
E	(7, 9)	15
F	(3, 2)	10
G	(2, 6)	5