

UNIVERSITY OF MASSACHUSETTS

Isenberg School of Management

Department of Finance and Operations Management

FOMGT 353-Introduction to Management Science

LP Example #6 – Transportation.

McWendys have 4 outlets, 3 factories and 2 warehouses. McWendys produces Scottish pancakes which they sell lightly grilled with butter.

Each factory can produce 40,000 pancakes per day. Outlet 1 uses 10,000 pancakes per day, Outlet 2 uses 20,000, Outlet 3 uses 30,000 pancakes per day and Outlet 4 uses 40,000 pancakes per day.

Each warehouse can handle up to 75,000 pancakes per day.

Pancakes can be shipped in any amounts from the three factories to the two warehouses and from the two warehouses to the four outlets.

The cost of shipping each pancake from a factory to a warehouse is given in the following table:

Cost in Cents (C)	Warehouse 1	Warehouse 2
Factory 1	0.50	0.55
Factory 2	0.40	0.45
Factory 3	0.30	0.30

The cost of shipping each pancake from a warehouse to an outlet is given in the following table:

Cost in Cents (K)	Outlet 1	Outlet 2	Outlet 3	Outlet 4
Warehouse 1	0.10	0.23	0.21	0.22
Warehouse 2	0.15	0.25	0.25	0.12

1. Produce the lowest-cost shipping plan.
2. If Factory 1 makes pancakes for 1 cent, Factory 2 for 1.2 cents and Factory 3 for 1.4 cents how can you include this into the model?