

THE UNIVERSITY OF NORTHERN BRITISH COLUMBIA
GEOGRAPHY 202
WINTER SEMESTER, 2013
LAB #1

The von Thünen Problem

(Due: January 30th)

The following hypothetical information describes the potential agricultural land uses in a simple von Thünen environment.

LAND USE	MARKET PRICE	YIELD	PRODUCTION COST	TRANSPORT RATE
Market Gardening	25	55	12.0	.9
Fluid Milk	20	40	8.8	.6
Wheat	15	30	5.0	.4
Corn	10	25	2.0	.3
Livestock	5	15	1.2	.2

1. Draw a graph illustrating the rent functions for each crop using a scale of approximately 1" = 100 units for rent and 1" = 5 km. for distance.
2. Illustrate and describe the resulting land use pattern. What are the widths of the various bands?
3.
 - a. Suppose the transport rate for market gardened product increased to 1.4. What would be the effect on the rent function and land use pattern? Justify your answer.
 - b. Suppose the yield of wheat increased by 20%. What would be the effect on land use? Justify.
 - c. Increased mechanization has lowered the production cost of fluid milk to 7.8 per unit. What is the effect of this on the land use pattern? Justify.
 - d. Suppose the market price of corn increased to 12 per unit. What would be the effect on the land use pattern? Justify.
 - e. Suppose the transport rates of all products increased 20%. What would be the effect on the land use pattern?

(Utilize the following pages in completing these questions)