

## Problem 1 (60%)

Consider two countries, Norway and Sweden, producing two goods, cars and electricity. The number of hours worked to produce one unit (number of cars and kWh of electricity) of each good is

	Norway	Sweden
Cars	2	1
Electricity	1	2

Consumers spend half their income on cars and the other half on electricity. For this exercise, the assumptions of the Ricardian model will hold.

1. Define opportunity costs. What is the opportunity cost of cars in Norway and Sweden?
2. Define comparative advantage. Which country has a comparative advantage in producing cars?
3. There are 5 million workers in Sweden and 5 million workers in Norway. Derive mathematically, draw and explain the production possibility frontiers for Sweden and Norway.
4. Imagine that international trade in cars and electricity is impossible. Explain why the price of cars relative to electricity,  $p_C/p_E$ , is 2 in Norway and 1/2 in Sweden.
5. There is free trade between the two countries. Draw and explain the world relative supply curve. Draw a world relative demand curve. Characterize the equilibrium relative price and pattern of specialization.
6. Draw budget lines for individuals in Norway before and after the opening of trade. Are they better or worse off?
7. Some individuals in Norway argue that electricity is too expensive, and that we should stop international trade to make it cheaper. Discuss the pros and cons of this policy proposal.

## Problem 2 (40%)

Among developed countries, Japan, Norway and Switzerland have the highest tariffs on agricultural goods in the world. Discuss the short run effect of these tariffs on (i) industry structure, (ii) exports and imports, (iii) prices and (iv) living standards for different groups in these countries. To guide the discussion, you can assume that:

- there are two goods produced, agricultural and other goods.
- there are two factors of production, land and labor.
- there are two countries, Norway and the rest of the world (RoW).
- the land to labor ratio is lower in Norway than in RoW.
- agricultural production is relatively land intensive.

Discuss briefly whether the long-run effects are different from the short-run effects. You should explain the economic mechanisms and intuition with words and diagrams. You may also refer to, and explain, theorems that we have reviewed in class. You can use math, but it is not required for this exercise.