UNIVERSITY OF OSLO
DEPARTMENT OF ECONOMICS

Exam: **ECON4415 – International trade**

Date of exam: Friday, December 5, 2008   **Grades are given: January 7, 2009**

Time for exam: 09:00 a.m. – 12:00 noon

The problem set covers 2 pages

Resources allowed:
- No resources allowed

The grades given: A-F, with A as the best and E as the weakest passing grade. F is fail.

The exam consists of 4 problems. They count as indicated. Start by reading through the whole exam, and make sure that you allocate time to answering questions you find easy. You can get a good grade even if there are parts of problems that you do not have time to solve.

Problem 1. (20 points)
   a) Explain the concept of comparative advantage.
   b) Explain why countries gain from trade. Use two alternative theories.
   c) Explain two reasons why Paul Krugman, according to the Swedish Academy of Sciences, was awarded the Nobel Memorial Prize in economics for 2008.

Problem 2. (20 points)
   a) State the Stolper-Samuelson theorem.
   b) Prove the Stolper-Samuelson theorem using a graphical approach. Hint: By using a property of the unit-cost function, show in a graph that the change in wages exceeds the change in product prices.

Problem 3. (30 points)
Suppose that two countries H and F produce computers and tomatoes with the following worker requirements:

	Computers (per unit)	Tomatoes (per kilo)	Total labor force
Home	3	2	L_H
Foreign	5	1	L_F

Assume $L_H = 1200$ and $L_F = 800$ workers. Preferences are Cobb Douglas with computers having a share of 2/3.

    a) Which country has the absolute advantage in both goods and which has a comparative advantage.

    b) Draw the production possibility frontier (PPF) for each country.

    c) Solve for the equilibrium prices and quantities when countries are not allowed to trade. Where is the relative price of computers greater? Why?

    d) Now suppose that countries are allowed to trade. Compute the world relative price of computers and relative wages.

    e) Explain the pattern of trade using the PPFs for both countries.

    f) Show that both countries benefit from trade.

Problem 4. (30 points)

Consider an economy (Home) which is initially not allowed to trade with any other country. Assume that the representative consumer has the following utility function over n differentiated goods:

$$U = \sum_{i=1}^{n} q_i^{\theta}$$

Here q_i is the quantity consumed of good i, while θ is a positive parameter. Suppose that the consumer has L_H units of labor and receives a wage w. Each differentiated good is produced by monopolistic competitive firms. Firms hire labor to produce a good according to

$$l_i = f + cq$$

    a) Express the problem of the consumer and state the demand equation for good q_i:

    b) Compute the optimal pricing for a producer.

    c) Compute the optimal number of varieties in equilibrium.

Now suppose Home is allowed to trade with a Foreign country. Suppose Foreign has L_F units of labor. Assume that trade does not incur any transportation cost.

    d) d. Compute exports and imports.

    e) e. Are there any gains from trade? Explain.