Quiz 4 Study Questions

4.1. Give short, concise definitions of the following:
   a. general equilibrium
   b. Pareto optimal (efficient) in consumption
   c. consumption contract curve
   d. Pareto optimal (efficient) in production
   e. production contract curve
   f. Pareto optimal (efficient) (in general)
   g. Nonwastefulness of general equilibrium under perfect competition
   h. Unbiasedness of general equilibrium under perfect competition
   i. utility possibility curve
   j. grand utility possibility curve
   k. (social) welfare function
   l. market failure

4.2. In a two-person, two-good, consumption Edgeworth box diagram, consider a distribution that does not lie on the contract curve. If the two individuals are initially placed at that distribution, explain why they will begin to trade with each other, and continue to trade until they reach a distribution on the contract curve.

4.3. What are the equations that characterize
   a. Pareto optimality in consumption?
   b. Pareto optimality in production?
   c. Pareto optimality (in general)?

In cases (a) and (b) explain why the equation characterizes the concept in question.

4.4. Explain how the production possibility or transformation curve is obtained from the contract curve in the production Edgeworth box. If you use a diagram in your answer, make the diagram large and label all curves, axes, and points.

4.5. Give the argument that shows why general equilibrium under perfect competition is Pareto optimal (in general). It is not necessary to give definitions of the concepts general equilibrium and Pareto optimality. Just use them in your argument.

4.6a. Explain how the utility possibility curve is obtained from the contract curve in the consumption Edgeworth box. If you use diagrams in your answer, make them large and label all curves, axes, and points.
   b. Explain how the grand utility possibility curve is obtained from the (ordinary) utility possibility curves as the output combination moves along the transformation curve. If you use diagrams in your answer, make them large and label all curves, axes, and points.
4.7. Explain why, to each point on the grand utility possibility curve there corresponds a basket of outputs on the production possibility curve whose distribution between the two consumers is Pareto optimal (in general).

4.8 Draw a diagram whose axes record individual utility values and which depicts (social) welfare maximization in a perfectly competitive economy. Make the diagram large and label all curves, axes, and points.

4.9. Assume our model of the perfectly competitive economy is a good representation of the actual economy. Explain why, under this assumption, the following quotation is false:

"If left alone without government or other outside help, the actual economy will allocate resources and produce and distribute outputs so as to provide (a) an approximately equal distribution of goods among consumers and (b) maximize social welfare."

4.10. Briefly describe the 4 kinds of market failure and in each case explain the cause of the failure.

4.11. State the general case in terms of efficiency for government intervention in a market that fails.