IEOR 151 – Homework 6
Due Monday, October 21, 2013 in class

1. Suppose a fast food restaurant would like to purchase veggie burger patties from a food distributor. The restaurant's utility for the patties is given by $S(q) = 1000ln(1+q)$. The fixed costs for the food distributor are $8,000$, and if the distributor is inefficient (efficient) then its marginal costs are 0.10 (0.08). Assume that the restaurant believes that there is a 80% chance that the food distributor is efficient.

   (a) What are the first-best production levels? (2 points)

   (b) What are the contracts to implement the first-best production levels? (2 points)

   (c) How much profit would the efficient distributor make if the restaurant offers a menu of contracts $\{(q_1^I, t_1^I), (q_1^E, t_1^E)\}$? (1 point)

   (d) What are the second-best production levels? (2 points)

   (e) What is the menu of contracts for the second-best production levels? (2 points)

   (f) What is the information rent of the efficient distributor for the menu of contracts for the second-best production levels? Is this higher or lower than the profit gained for the menu of contracts for the first-best production levels? (2 points)