2nd Seminar assignment in ECON 4245, week 38 (17-21 Sep)

A. 50:50 sharing of gains from trade

A offers you to join a nice business opportunity. You are supposed to contribute with some rock that you own, and he contributes with a rock-crusher that he owns. Assume that if you do business together it means that you pay A rents for the crusher and you get the income from the product sold (crushed stones).

1. Monday: Your stones (uncrushed) is worth 100 on the market. A can rent his crusher out on the market and earn 50. If you do business together the product gives an income of 250.
    a. Assuming 50:50 sharing of gains from trade, how much of the 250 will you get, and how much do you pay in rents to A?
2. Tuesday: The market for rock-crushers has become tighter, A can now earn 75 if he rents it out on the market.
    a. Who has a better bargaining position?
    b. Assuming 50:50 sharing of gains from trade, how much of the 250 will you get, and how much to A?
3. Wednesday: A may modify his crusher so it will be more efficient in crushing the stone type you have, without affecting efficiency in crushing other stone types. The modification cost is 30. If the modification is made, the product is worth 300 instead of 250. Assume you are the only one who has this stone type.
    a. Will A modify if the modification is unverifiable?
    b. Does it matter for A's choice whether the market conditions are like Monday or Tuesday – and why?
    c. Does it matter whether the income is verifiable?

B. Pecking order

1. Why is debt better than equity?
2. Why is debt worse than internal funds?

C. Money burning

Consider Myers&Majluf's model from Lecture3. Now let the insider get one more choice opportunity: to invest in the project *V-C*, i.e. the standard project *V* with some money burnt, *C*. Assume that without this new opportunity *H* firms will not invest.

1. If money-burning (, that is to present the investment project *V-C* to the investors,) should work as a (credible) signal of being *H*, which two conditions must be satisfied?
2. If the signaling works, the investors will know which type of firm they confront.
    a. will the expression for *f* when investors confront a *L* firm and when confronting a *H* firm be the same then?
    b. find expression(s) for this or these *f(s)*.
3. Prove/explain that the conditions in question 1. are:

$$\left(1-\frac{I}{L+V}\right)(L+V)\geq\left(1-\frac{I}{H+V-C}\right)(L+V-C)\Leftrightarrow$$

$$\frac{L+V-C}{H+V-C}+\frac{C}{I}\geq 1\Leftrightarrow$$

$$C^2-(H+V)C+(H-L)I\leq 0$$

and

$$\left(1-\frac{I}{H+V-C}\right)(H+V-C)\geq H\Leftrightarrow$$

$$V-C\geq I$$