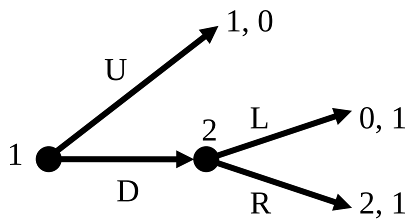
Guide for grading – ECON4240, Spring 2004

Problem 1

a) FALSE. E.g,, consider matching pennies.
b) TRUE. For any belief, the dominating strategy is a better reply.
c) TRUE. A subgame perfect Nash equilibrium can be constructed by means of backward induction.
d) FALSE, unless, for each player, the payoffs assigned to terminal nodes are all different. E.g., the following game has two subgame perfect Nash equilibrium.



Problem 2

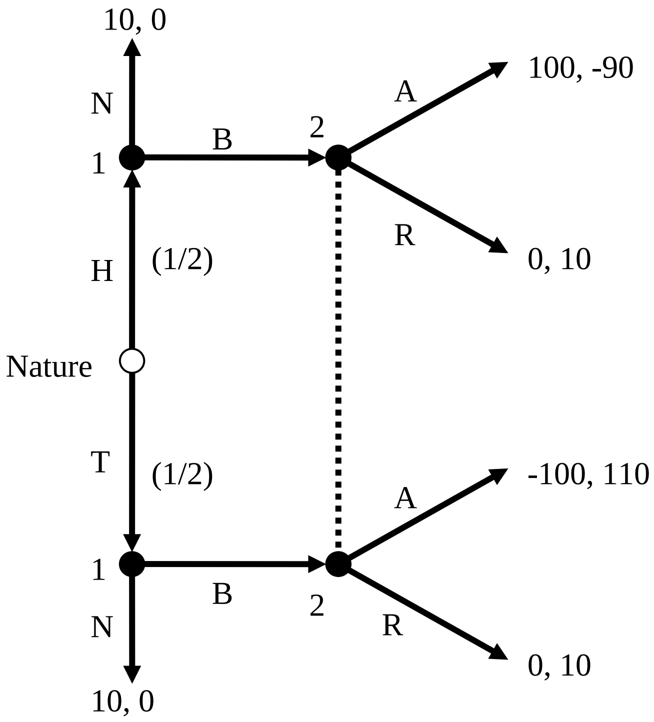
a) Rationalizability has no bite in any of the variants. Variant (i): In addition to the two pure-strategy Nash equilibria, (O, O) og (M, M), there is also a mixed-strategy Nash equilibrium, ((3/4, 1/4), (1/4, 3/4)). Variant (ii): There is only a mixed-strategy Nash equilibrium, ((3/4, 1/4), (3/4, 1/4)).
b) The Baysian normal form looks like this:

	O	M
OO	3/2, 1	3/2, 0
OM	2, 1/2	0, 3/2
MO	0, 1/2	2, 3/2
MM	1/2, 0	1/2, 3

c) OO, OM, and MO are rationalizable for player 1, and both O and M are rationalizable for player 2. (MO, M) is a pure-strategy Nash equilibrium. To find mixed-strategy Nash equilibria, note that OO must be played with positive probability, implying that 1's equilibrium payoff equals 3/2. This in turn implies that either 2 must play O with probability 3/4 so that OM is equally good as OO, or 2 must play M with probability 3/4 so that MO is equally good as OO. This determines two mixed-strategy Nash equilibria: ((3/4, 1/4, 0, 0), (3/4, 1/4)) and ((3/4, 0, 1/4, 0), (1/4, 3/4)).

Problem 3

a)



b) In any pure-strategy perfect Bayesian equibrium, both types of player 1 choose N and 2 chooses R. 2 assigns at least 0.5 probability on H if 1 chooses B. (There is also a set of mixed-strategy perfect Bayesian equilibria where both types of player 1 choose N, 2 chooses R with at least 0.55 probability, and 2 assigns exactly 0.5 probability on H if 1 chooses B.) Credit should be given to students who observe that player 1 of type T can only lose by choosing B.

Problem 4

a) Low-probability consumers pay a deductible to avoid that high-probability consumers choose their contract with a lower premium.

b) On the one, high-probability consumers are indifferent between the two contracts. On the other hand, the contract for low-probability consumers with a deductible is better for the low-probability consumers than for the high-probability consumers. It follows that one would to choose to be a low-probability consumer, if faced with such a hypothetical choice.

c) A "rebel" firm could earn positive expected profits by offering a pooling contract that attracts all consumers.