OULUN YLIOPISTON
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Tentin päivämäärä / Date of exam:	16.4.2015
Opintojakson koodi, nimi ja tentin numero / The code and the name of the course and number of the exam:	721320S Economic Theory I
Tentaattori(t)/ Examiner(s):	Rauli Svento
Sallitut apuvälineet / The devices allowed in the exam:	☒ Laskin, **ei** graafinen/**ei** ohjelmoitava)/ Calculator (**not** graphic, **not** programmable) ☒ Laskin, graafinen/ohjelmoitava)/ Calculator (graphic, programmable) ☐ Sanakirja/Dictionary ☐ Muu materiaali, tarkennettu alla / Other material, specified below Click here to enter text.
Tenttiin vastaaminen / Please answer the questions	☒ suomeksi/ in Finnish ☒ englanniksi/ in English
Kysymyspaperi on palautettava / Paper with exam questions must be returned:	☐ Kyllä/Yes ☒ Ei/No

1. How do cost minimization and profit maximization of a firm combine into a dual optimization framework?
2. Consumer has a utility function

$$U(x_1, x_2) = x_1^{1/2} x_2^{1/2}, where\ x_1 > o, x_2 > 0$$

and her budget constrain is $M = p_1 x_1 + p_2 x_2$. Use this information to calculate

   a) Marshallian demand functions x(p,M)
   b) Indirect utility function v(p,M)
   c) Hicksian demand function H(p,U)
   d) Expenditure function m(p,U).

3. Explain the difference between adverse selection and moral hazard. Assume that high-risk and low-risk customers want to buy insurance from the insurance market and the seller cannot identify the types. Write down the incentive compatibility constraints and reflect the choices made under these constraints.

4. Make the necessary assumptions and show how a two players two choices game can be solved by mixed strategy approach.

5. Two firms produce homogeneous outputs with cost functions $C_1 = 2q_1^2, C_2 = q_2^2$ and the inverse market demand function $p = 100 - (q_1 + q_2)$. Show the Cournot-Nash equilibrium and the joint-profit maximizing equilibrium. Explain your results graphically.