Written Exam for the M.Sc. in Economics 2010-I

“Behavioral and Experimental Economics”

Re-take Exam

(2 hours, closed book exam)

This exam has 5 questions in total. Answers must be in English.
Good luck.

Question 1: Experimental methods

a) Explain the following expressions
   "replication"
   "ceteris paribus variation"
   "session"
   "treatment"

b) Explain the sufficient conditions to "induce" experimental subjects' preferences (Smith, AER, 1982).

c) Can experiments which fail to induce preferences nevertheless be interesting? Illustrate by referring to one experimental study discussed during the course.

Question 2: Voting and Provision of Public Goods

a) Describe the design by Tyran and Feld (SJE, 2006)

Hint:

	No law	**Mild law**	**Severe law**
Exogenous	NoEx	MildEx	SevereEx
Endogenous	NoEnd	MildEnd	SevereEnd

b) What is the prediction for SevereEnd if all players are fully rational and egoistic?

c) What is the prediction for MildEnd if all players are fully rational and egoistic?

d) What do the authors observe in treatment MildEnd? How do contributions compare to MildEx?

Question 3: Anchoring

Table 1 below shows the results from "experiment 1" reported in Ariely et al. (QJE 2003).

TABLE I
AVERAGE STATED WILLINGNESS-TO-PAY SORTED BY QUINTILE OF THE SAMPLE'S SOCIAL SECURITY NUMBER DISTRIBUTION

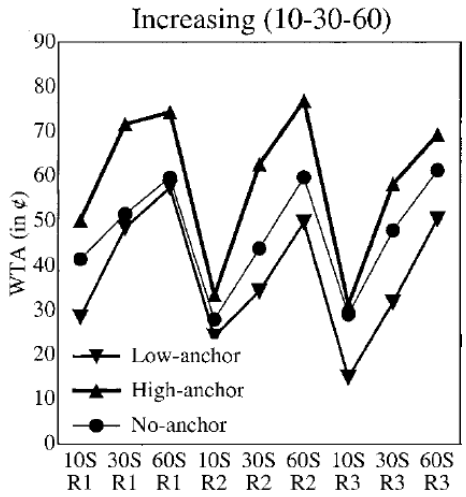
Quintile of SS# distribution	Cordless trackball	Cordless keyboard	Average wine	Rare wine	Design book	Belgian chocolates
1	\$ 8.64	\$16.09	\$ 8.64	\$11.73	\$12.82	\$ 9.55
2	\$11.82	\$26.82	\$14.45	\$22.45	\$16.18	\$10.64
3	\$13.45	\$29.27	\$12.55	\$18.09	\$15.82	\$12.45
4	\$21.18	\$34.55	\$15.45	\$24.55	\$19.27	\$13.27
5	\$26.18	\$55.64	\$27.91	\$37.55	\$30.00	\$20.64
Correlations	.415	.516	0.328	.328	0.319	.419
	$p = .0015$	$p < .0001$	$p = .014$	$p = .0153$	$p = .0172$	$p = .0013$

The last row indicates the correlations between Social Security numbers and WTP (and their significance levels).

a) Describe “experiment 1” and explain the hypothesis that motivated this experiment.

b) What is the main conclusion from the table above?

c) The figure below shows the results of “experiment 2” reported in Ariely et al. (QJE 2003). Describe this experiment



Question 4: Money Illusion

a) Explain the basic design of Fehr and Tyran (Games and Economic Behavior, 2006). (Hint: see table below for treatments)

b) The table below shows percentages of subjects choosing equilibrium A or C respectively in the last period of Fehr and Tyran (Games and Economic Behavior, 2006).

	NH	RH	NC	RC
Equilibrium A	0.00	0.98	0.82	0.83
Equilibrium C	0.84	0.00	0.18	0.09

Comment on and interpret the results in the table along the following dimensions:

1) NH vs. RH

2) NC vs. RC

3) NH vs. NC

Question 5: Voting and redistribution

Consider agents with the following utility functions (Fehr and Schmidt, QJE 1999):

$$u_i(\mathrm{x}) = x_i - \frac{1}{n-1}\left[\alpha_i \sum_{j \neq i} \max\left(x_j - x_i, 0\right) + \beta_i \sum_{j \neq i} \max\left(x_i - x_j, 0\right)\right]$$

where $\mathrm{x} = (x_1, \ldots, x_n)$, $1 \geq \beta_i \geq 0$, $i = 1, 2, \ldots, n$.

Tyran and Sausgruber (EER, 2004) adapt the model by Fehr and Schmidt (1999) to analyze voting on redistribution. They derive the following:

$$y(R_{rp}) = \lambda n_r + \frac{1+\mu}{2} n_m + n_p.$$

a) Name three simplifying assumptions Tyran and Sausgruber (EER, 2004) use to deduce the formula above.

b) Explain the meaning of α_i and β_i in Fehr and Schmidt (QJE, 1999). How does λ relate to α_i and β_i? How does μ relate to α_i and β_i?
(Hint: You may write down the formula or provide intuitions for these relations)

c) How do Tyran and Sausgruber (EER, 2004) test the theory experimentally?

d) What are the predictions (Null and alternative hypothesis) in the design by Tyran and Sausgruber (EER, 2004)?
(Hint: explain how the alternative hypothesis is "calibrated")

e) What are the main results?

f) Suggest one experimental treatment variation in which you expect to observe less fair-minded behavior.

Question 6: Guessing game

Consider the standard guessing game with factor $p < 1$. Suppose a share s of the $n > 2$ players is irrational. These players choose a no matter what and a share 1-s is rational (i.e. have rational expectations) and choose a best reply r to what everybody else does.

a) Derive the Nash equilibrium in this game as a function of p, s and a

b) Derive the equilibrium average number M^* and decompose the total effect into a direct and the indirect effect of a change in s.

c) Derive the value of μ (the multiplier) in the expression $\partial M^*/\partial s = \mu\,(a - r)$

d) How does μ depend on the degree of strategic complementarity and the share of irrationals?

e) Calculate (i) the total effect, (ii) the direct effect and (iii) the indirect effect for the values $p = 0.8$, $a = 50$ is s changes from $s_1 = 0.1$, to $s_1 = 0.2$.