Economics 316

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Problems for Tutorial 4

1. Find all the mixed strategy Nash equilibria of the following games.

	L	R
T	$6,0$	$0,6$
B	$3,2$	$6,0$

	L	R
T	$2,2$	$0,0$
B	$2,0$	$1,1$

2. Two people can perform a task if, and only if, they both exert effort. They are both better off if they both exert effort and perform the task than if neither exerts effort (and nothing is accomplished); the worst outcome for each person is that she exerts effort and the other person does not (in which case again nothing is accomplished). Specifically, the players' preferences are represented by the payoffs in Figure 1, where c is a positive number less than 1 that can be interpreted as the cost of exerting effort. Find all the mixed strategy Nash equilibria of this game. How do the equilibria change as c increases? Explain the reasons for the changes.

	No effort	*Effort*
No effort	$0,0$	$0,-c$
Effort	$-c,0$	$1-c,1-c$

Figure 1. The game in Problem 2.

3. [To be done only if time remains after doing the previous two questions.] For the following game check whether the indicated strategy pair is a mixed strategy Nash equilibrium.

	$\frac{1}{3}$ L	0 C	$\frac{2}{3}$ R
$\frac{1}{3}$ T	$5,2$	$0,2$	$2,4$
$\frac{1}{3}$ M	$1,1$	$4,2$	$4,1$
$\frac{1}{3}$ B	$6,3$	$2,1$	$1,1$