PS/Ec 172, Homework 7
Due Thursday, March 8th

Collaboration on homework is encouraged, but individually written solutions are required. Also, please name all collaborators and sources of information on each assignment; any such named source may be used.

(1) *A repeated game.* Consider the following base game G_0:

	D	C	F
D	$0,0$	$1,0$	$0,1$
C	$0,1$	$2,2$	$-2,3$
F	$1,0$	$3,-2$	$-2,-2$

(a) *50 points.* Calculate the feasible and enforceable sets for this game.

(b) *50 points.* Find a subgame perfect Nash equilibrium for the G_0-infinitely repeated game with limit of means utilities whose payoff profile is $(2,2)$.

(2) *Bonus question: The incredible casino.* A casino has a sequence of slot machines $(M_1, M_2, \ldots)$. Each machine requires the gambler to swipe her credit card, and has a single button. After swiping the card and pressing the button, machine M_n credits the gambler 1 dollar with probability $1-1/n^2$, and otherwise charges her n^2 dollars.

(a) *1 point.* What is the gambler's expected revenue when using machine M_n?

(b) *1 point.* Kim gambles once at each machine, in order: M_1, M_2, M_3, etc. Explain why, with probability one, her revenue will tend to infinity. Hint: use the Borel-Cantelli lemma. You can read about it on Wikipedia: `http://en.wikipedia.org/wiki/Borel-Cantelli_lemma`.

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