ECON 411 Assignment #2 Winter 2022-23

Due by Wednesday, February 8, 2023 at 11:59pm onQ

#1. Consider the following **first-price, sealed-bid private value auction**. There are 5 bidders. Each bidder's valuation (v_i for bidder i) for the object follows the standard uniform distribution U[0,1]. These valuations are distributed independently. Suppose that the seller sets a minimum price (i.e., reserve price) r. Find the symmetric Bayesian equilibrium bidding function $b_i = B(v_i)$ in this auction.

#2. Consider the following two-player simultaneous-move game played repeatedly with discount factor δ.

(a) If this game is played two times. Find all subgame perfect equilibria in that game.

(b) Now suppose it is played infinitely many times. In a figure, identify the players' payoffs which can be sustained as the average per-period payoffs in a subgame perfect equilibrium when δ approaches 1.

	C	D
A	$1,2$	$0,0$
B	$2,1$	$3,2$

#3. Consider the following simultaneous-move game played infinitely many times between two players. Draw the area for the feasible and individually rational payoffs for the two players in a figure.

	C	D
A	$1,2$	$3,0$
B	$2,1$	$1,0$

#4. Consider the following 2-player simultaneous-move game with asymmetric information. Player 1 knows which game they are playing. Player 2 only knows that with probability q, game (1) is played; with probability $1-q$, game (2) is played. Find all pure-strategy Bayesian equilibria in this game.

game (1)

	C	D
A	$1,1$	$1,3$
B	$2,4$	$2,2$

game (2)

	C	D
A	$2,1$	$2,3$
B	$1,4$	$1,2$