Experimental Economics I: Behavioral Game Theory Homework (15F)

For BGT1 (9/14)

1. **Ultimatum Games:** Paul the Proposer and Rachael the Respondent divide $10. Paul proposes how to split the money between the two of them, and Rachael decides to accept or reject. If Rachael accepts, the money is divided accordingly; if Rachael rejects, both earn zero. Find the SPE when the set of possible offers is:
    a. A_p = {(P, R): (9.99, 0.01), (9.98, 0.02), (9.97, 0.03), …, (0.01, 9.99)}.
    b. A_p = {(P, R): (10, 0), (9, 1), (8, 2), …, (0, 10)}.
    c. What do you think would happen when real people play this game?
2. ***p*-Beauty Contest Game:** 25 students each guesses a number between 0 and 100. The winner is the one who guesses closest to two thirds of the average of all guesses.
    a. What is the NE of this game? Is it unique? Why or why not?
    b. What would happen when real people play this game for the first time?
    c. What if people played this game repeatedly for 10-20 rounds?
3. **Continental Divide Game:** Seven people each choose 1-14; payoff depends on one's choice and the median choice (See table below).
    a. What is the NE of this game? Is it unique? Why or why not?
    b. What would happen when real people play this game for the first time?
    c. What if people played this game repeatedly for 10-20 rounds?

You\Median	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	45	49	52	55	56	55	46	-59	-88	-	-	-	-135	-142
2	48	53	58	62	65	66	61	-27	-52	-67	-77	-86	-92	-98
3	48	54	60	66	70	74	72	1	-20	-32	-41	-48	-53	-58
4	43	51	58	65	71	77	80	26	8	-2	-9	-14	-19	-22
5	35	44	52	60	69	77	83	46	32	25	19	15	12	10
6	23	33	42	52	62	72	82	62	53	47	43	41	39	38
7	7	18	28	40	51	64	78	75	69	66	64	63	62	62
8	-13	-1	11	23	37	51	69	83	81	80	80	80	81	82
9	-37	-24	-11	3	18	35	57	88	89	91	92	94	96	98
10	-65	-51	-37	-21	-4	15	40	89	94	98	101	104	107	110
11	-97	-82	-66	-49	-31	-9	20	85	94	100	105	110	114	119
12	-133	-117	-100	-82	-61	-37	-5	78	91	99	106	112	118	123
13	-173	-156	-137	-	-96	-69	-33	67	83	94	103	110	117	123
14	-217	-198	-179	-	-	-	-65	52	72	85	95	104	112	120