

Passed Solution Review

6. Determine all of the Nash equilibria (pure-strategy and mixed-strategy equilibria) of the following games.

(a)

		2	
		H	T
1	H	1, -1	-1, 1
	T	-1, 1	1, -1

(b)

		2	
		C	D
1	C	2, 2	0, 3
	D	3, 0	1, 1

(c)

		2	
		H	D
1	H	2, 2	3, 1
	D	3, 1	2, 2

(d)

		2	
		A	B
1	A	1, 4	2, 0
	B	0, 8	3, 9

p
1-p

q 1-q

(e)

		2	
		A	B
1	A	2, 2	0, 0
	B	0, 0	3, 4

p
1-p

q 1-q

(f)

		2		
		L	M	R
1	U	8, 1	0, 2	4, 3
	C	3, 1	4, 4	0, 0
	D	5, 0	3, 3	1, 4

p
1-p

q 1-q

d) 1: $1q + 2(1-q) = 0q + 3(1-q)$
 $q + 2 - 2q = 3 - 3q$
 $2 - q = 3 - 3q$
 $-1 = -2q$
 $q = .5$

2: $4p + 8(1-p) = 0p + 9(1-p)$
 $4p + 8 - 8p = 9 - 9p$
 $8 - 4p = 9 - 9p$
 $1 = 5p$
 $p = .2$

Pure NE: (A, A) and (B, B)
 Mixed NE: $(.2A, .8B)$ and $(.5A, .5B)$

e) 1: $2q + 0 = 0 + 3(1-q)$
 $2q = 3 - 3q$
 $5q = 3$
 $q = 3/5$

2: $2p + 0 = 0 + 4(1-p)$
 $2p = 4 - 4p$
 $6p = 4$
 $p = 2/3$

Pure NE: (A, A) and (B, B)
 Mixed NE: $(2/3A, 1/3B)$ and $(3/5A, 2/5B)$

f) n dom L Mix U/C dom D

1: $0 + 4(1-q) = 4q + 0$
 $4 - 4q = 4q$
 $4 = 8q$
 $q = 1/2$

2: $2p + 4(1-p) = 3p + 0$
 $2p + 4 - 4p = 3p$
 $4 - 2p = 3p$
 $4 = 5p$
 $p = 4/5$

Pure NE: (C, M) and (U, R)
 Mixed NE: $\sigma_1(0, 1/2, 1/2)$ and $\sigma_2(0, 1/2, 1/2)$

(f)

did dominance v Mang

		2		
		L	M	R
1	U	8, 1	0, 2	4, 3
	C	3, 1	4, 4	0, 0
	D	5, 0	3, 3	1, 4

$2p + 4(1-p) = 4p + 0(1-p)$
 $2p + 4 - 4p = 4p$
 $4 = 6p$
 $p = 2/3$