10.

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1. (T)

2. (F)

3. (T)

4. (F)

5. (T)

6.

F \ M	O (q)	S (1-q)
(p) O	3, 2	0, 0
(1-p) S	0, 0	2, 3

(a)

$U_F(O; q) = 3q + 0\times(1-q) = 3q$

$U_F(S; q) = q\times 0 + 2(1-q) = 2-2q$

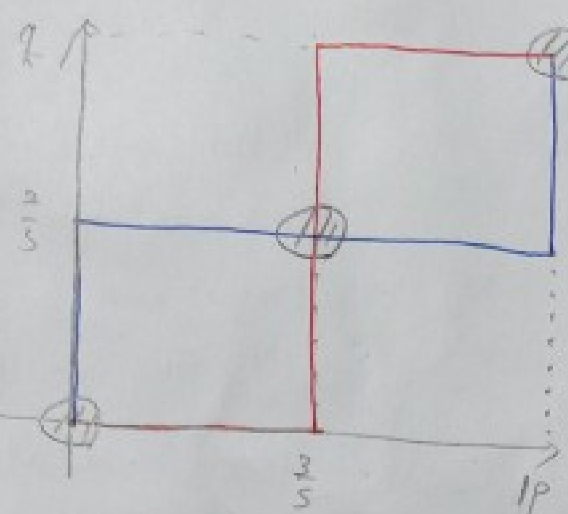
$$\boxed{BR_F(q) = \begin{cases} q > \frac{2}{5}, & p=1 \\ q = \frac{2}{5}, & 0<p<1 \\ q<\frac{2}{5}, & p=0 \end{cases}}$$

$U_M(O; p) = 2p + 0\times(1-p) = 2p$

$U_M(S; p) = (1-p)\times 0 + 3(1-p) = 3-3p$

$$\boxed{BR_M(p) = \begin{cases} p > \frac{3}{5}, & q=1 \\ p = \frac{3}{5}, & 0<q<1 \\ p<\frac{3}{5}, & q=0 \end{cases}}$$

(b)



∴ Nash equilibria

⇒ $(p=1, q=0)$, $(p=0, q=1)$

$(p=\frac{3}{5}, q=\frac{2}{5})$

7번.

	A	B	② C	④ D
W	3, 0	0, 3	4, 2	5, 0
~~X~~ ③	~~1, 0~~	~~2, 0~~	~~2, 3~~	~~3, 5~~
Y	0, 3	4, 2	2, 1	2, 1
~~Z~~ ①	~~1, 0~~	~~1, 1~~	~~1, 0~~	~~10, 0~~

$\boxed{\text{player 1's rationalizable strategy set } (W, Y) \quad \text{player 2's rationalizable strategy set } (A, B)}$

8번.

1 \ 2	A	B
X	2, 2	1, 1
Y	1, 1	1, 1

player 1's X strategy is weakly dominates player 1's Y strategy whatever player 2 chooses. Also, player 2's A strategy is weakly dominates player 2's B strategy. So, (X, A) is a dominant strategy equilibrium.

Meanwhile, when player 2' chose A, player 1's best response is X and when player 2 chose B, then player 1's best response are X, Y. When player 1 chose X, player 2's best response is A, when player 1's chose Y, then player 2's best response are ~~&~~ A and B.

So, the equilibrium about these strategies, so called Nash ~~equilibrium~~ equilibria are like (X, A), (Y, B) and this result include dominant strategy equilibrium like (X, A).

So, this ~~precise~~ premise is correct.

Dominant strategy Eq $\xrightarrow{\ominus}$ Nash eq

9번.

(a) customers willingness to pay is 25, and marginal cost = 15.

if, both firms set same price like 25, they get profit same divide by 2 because of homogeneous product like this.

i) when they set same price p=25

$$\pi = \frac{25\times120 - 15\times120}{2} = 600 \text{ (each firm)}$$

they have no incentive to set more higher than 25. But if firm i set little lower but above than marginal cost like 24, then firm i dominates market like

$\pi_i = 24\times120 - 15\times120 = 1080$

$\pi_j = 0$.

So, they have incentive to set price little lower than other player so, finally they set price like this, and this is Nash equilibrium.

$$P_i^* = P_j^* = 15. \ (= \text{marginal cost})$$

(b) if each firm i, j set their price like

$P_i = 18$, $P_j = 18$.

and then, each firm has no incentive to move price higher or lower because when firm i want to get lower price like 17, then also firm j's price match that price because it is guaranted.

So, if they get same price in range $15 \le p \le 25$, then all these things are Nash equilibria.

$$\boxed{\begin{array}{c}(15, 15)\\(16, 16)\\\vdots\\(25, 25)\end{array}}$$

(c) In that result in (b), they want to set price both 25, because it is customer's willingness to pay and that's value ~~is~~ make both firm's profit to be maximized.

So they set price like this in reality

$$\boxed{P^* = 25}$$

10.

(a)

1 \ 2	A	B
X	3, 2	-4, 5
Y	5, 1	2, 3

(a)

player 1's security strategy is Y, and player 2's security strategy is B.

In player 1's aspect, when chose X,

player 2 chose A, → 3

player 2 chose B, → -4

-4 is minimum payoff level when 1 chose X.

when player 1 chose Y,

player 2 chose A, → 5

player 2 chose B → 2

2 is minimum payoff level when 1 chose Y

2 is max than -4 so, player 1's security strategy is Y.

Same algorithm is applied to player 2

then player 2's security strategy is B.

security strategy profile

= (Y, B)

(b)

then let's find Nash eq.

When player 2 chose A, then player 1's best response is Y,

When player 2 chose B, then player 1's best response is Y,

Actually Y is strictly dominate X.

When player 1 chose X, then player 2's best response is B,

When player 1 chose Y, then player 2's best response is B.

It's also strictly dominates A.

Then Nash eq is (Y, B)

and it is same as both player's security strategies profile.

11. in full verifiability

(a)

	I	N
I	9, 9	$-3+\beta$, $9-\beta$
N	$10+\alpha$, $-2-\alpha$	0, 0

In agree to play (I, I), if there are some breaches, and then ~~in~~ enforcing restitution damages, payoff in induced game is like this

$\boxed{\begin{matrix}\alpha = -10 \\ \beta = 9\end{matrix}}$

1 \ 2	I	N
I	9, 9	6, 0
N	0, 8	0, 0

1-(b).

In limited verifiability, court set game like this,

1 \ 2	I	N
I	9 , 9	-3+α , 9-α
N	10+α , -2-α	α , -α

and then court can verify only both firm chose N. ~~or not~~ (each firm chose N).

but firm cannot know which player chose N.

So, consider all cases.

if, player 1 breaches,

in reliance damage

α = -2

	9,9	-5 11
	8,0	-2, 2

in restitution damage α = -10

	9,9	-13 19
	0,8	-10, 10

if player 2 breaches

in reliance damage

α = 3

	9,9	0, 6
	13,-5	3, -3

in restitution damage

α = 9

	9,9	6, 0
	19,-11	9, -9

in all game,

both player do not have (I,I) Nash eq.

So, there is ~~not contract~~ no contract that induces play of (I,I)