

Discussion 8

BC566) $(19/44, 6/44, 19/44), (19/44, 6/44, 19/44)$
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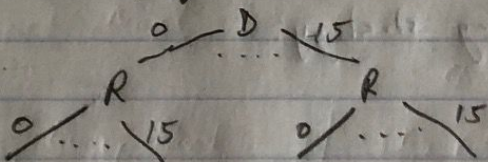
BC567)

		Cheat	No
P1	Cheat	$-mc + 2(1-m)$	$-mc + 2(1-m)$
	No	$1-m$	$-mc + 2(1-m)$
		$\max\{-mc + 2(1-m), 1-m\}$	$\max\{-mc + 1-m, 0\}$

q solve $q(1-m) + (1-q)\max\{-mc + 1-m, 0\} = -mc + 2(1-m)$
 where $p=q$ represent probability of cheating for each player.

Hard 3) 100 consumers can either buy or not buy. q proportion value the object \$15, the rest \$10. Distributor sells to retailer at price w, retailer then sells at price p. Retailer cannot distinguish consumers.

a) sketch this as 2-player extensive form game.



b) Find subgame perfect equilibrium.

$$\text{Retailer} = \begin{cases} 15 & \text{if } 100q(15-w) \geq 100(10-w) \\ 10 & \text{otherwise} \end{cases}$$

Distributor can force Retailer's hand with $w=15$.

But also low enough w can induce $p=10$.

$$100q(15-w) \leq 100(10-w)$$

$$w - 9w \leq 10 - 15q$$

$$w \leq \frac{10 - 15q}{1 - 9}$$

Choose based on $100 \cdot \frac{10 - 15q}{1 - 9} \geq 15 \cdot 100q$
 $p=10$ $p=15$

4) Coin placed at START. P1 moves {up, left, diagonal}. P2 moves according to same rules. Black cells are inaccessible. Player who places END wins. Determine who has winning strategy.

END	W	L	W	L	Black	Black	Black	9
W	W	W	Black	W	W	L	L	8
L	W	L	W	L	Black	W	Black	7
W	W	Black	Black	Black	W	L	W	6
L	W	L	W	Black	L	W	W	5
W	W	Black	W	L	W	Black	L	4
L	Black	L	W	W	W	L	W	3
Black	W	W	Black	L	W	W	W	2
Black	L	W	L	W	W	L	START	1
	H	G	F	E	D	C	B	A

P1 has winning strategy.