BUNDLING : PRACTICE OF SELLING TWO OR MORE PRODUCT AS A PACKAGE.

SUPPOSE A FILM COMPANY WANTS TO SELL THE TWO MOVIES ABOVE TO ITS CUSTOMERS, THEATER A AND THEATER B.

	LES MISERABLES	ARGO		(BAHT)
A	12,000,000 ∨	3,000,000 ∧	→	15,000,000
B	10,000,000	4000,000	→	14,000,000

	L	ARGO	
A	12 ∨	4 ∨	→ 16
B	10	3	13

OPTION 1 : SELL SEPARATELY

$$TR_1 = TR_L + TR_A$$

$$= 2 \cdot 10,000,000 + 2 \cdot 3,000,000$$

$$= 26,000,000 \text{ BAHT.}$$

→ $2 \cdot 10 + 2 \cdot 3 = 26$

$2 \cdot 13 = 26$

OPTION 2 : BUNDLING

$$TR_2 = 2 \cdot 14,000,000$$

$$= 28,000,000$$

$TR_2 > TR_1$. SO, IF THIS IS THE CASE, BUNDLING GENERATES HIGHER TR (WHY?)

BUNDLING (CONTINUED)

BUNDLING

	LES MISERAB	ARGO
THEATER A	12000	3000 → 15000
THEATER B	10,000	4000 → 14,000

OBJECTIVE: TO MAXIMIZE TOTAL REVENUE FROM SELLING 2 MOVIES TO THE TWO THEATERS' (A AND B)

OPTION 1 SELL SEPARTELY : $P_L = 10{,}000$

$P_A = 3000$

$TR = 2 \cdot 10000 + 2 \cdot 3000 = 26{,}000$

OPTION 2 BUNDLING : $P_B = 14{,}000$.

(BUNDLED PRICE)

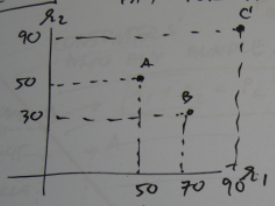
$TR = 2 \cdot 14{,}000 = 28{,}000$

RESULT BUNDLING GENERATES HIGHER TR. (WHY?)

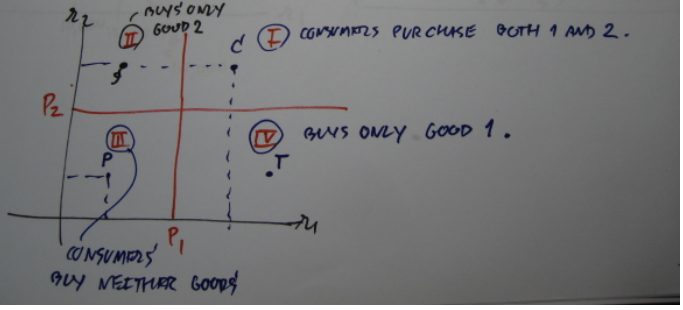
POSITION 1 : BUNDLING GENERATES HIGHER TR THAN SELLING SEPARATELY WHEN DEMANDS ARE NEGATIVELY CORRELATED.

NOTICE THAT A IS WILLING TO PAY MORE FOR LES MISERABLE COMPARE TO B. BUT B IS WILLING TO PAY MORE FOR ARGO COMPARE TO A.

RESERVATION PRICE : MAXIMUM PRICE A BUYER IS WILLING TO PAY FOR A GOOD OR SERVICE.

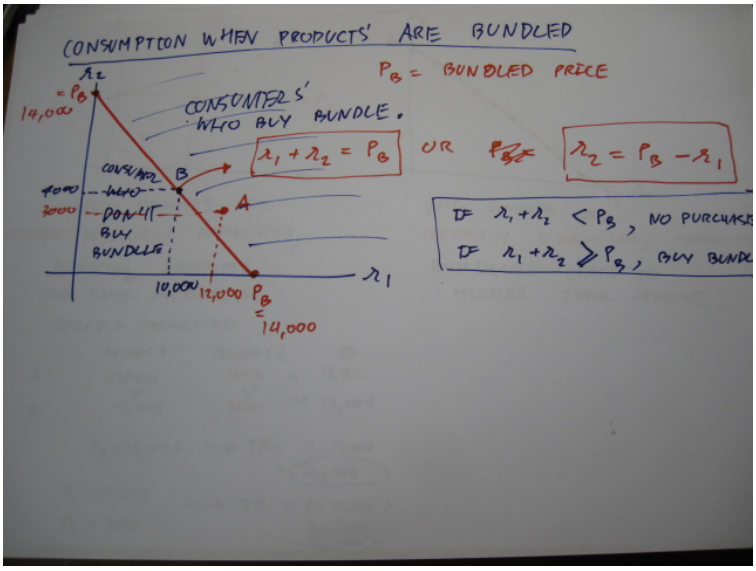


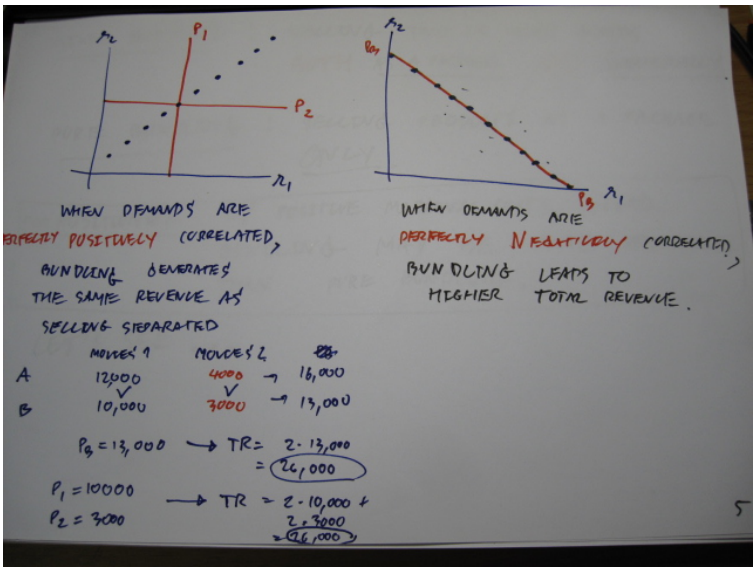
A, B, C' ARE CUSTOMERS'

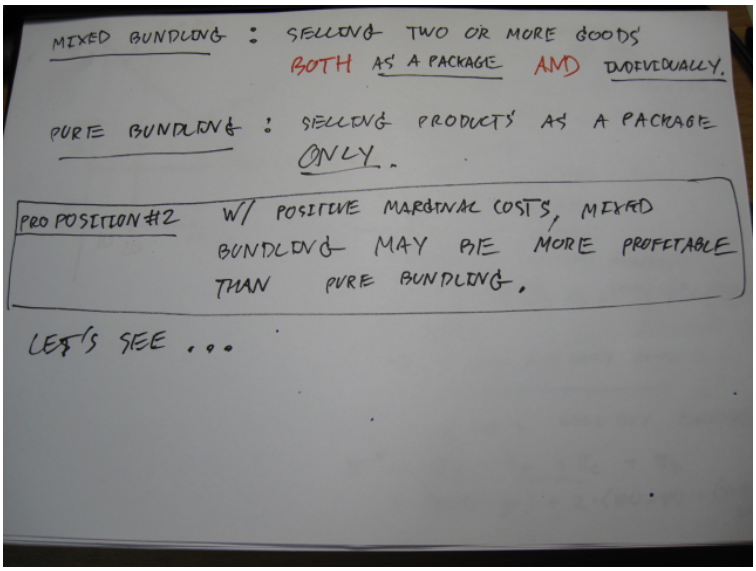


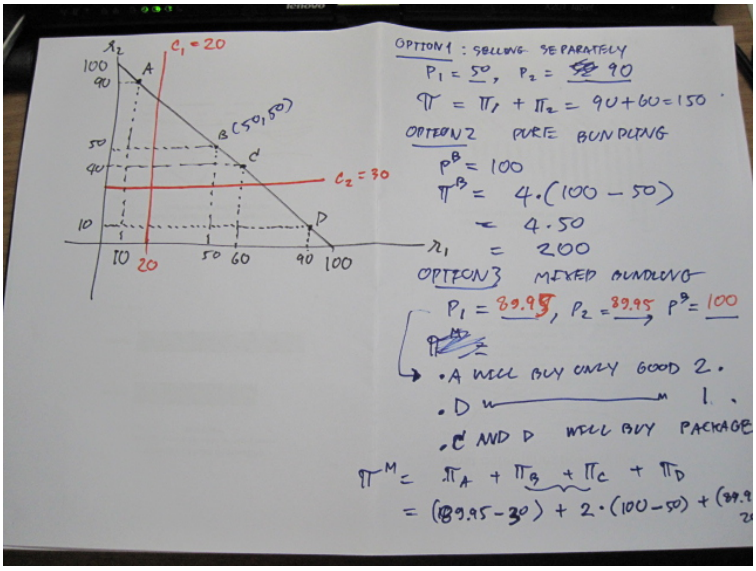
I CONSUMERS PURCHASE BOTH 1 AND 2.

IV BUYS ONLY GOOD 1.


CONSUMPTION WHEN PRODUCTS ARE BUNDLED
P_B = BUNDLED PRICE
r_2
$= P_B$
14,000
CONSUMERS WHO BUY BUNDLE.
$r_1 + r_2 = P_B$ OR $r_2 = P_B - r_1$
CONSUMER WHO DON'T BUY BUNDLE
4000
3000
B
A
10,000
12,000
P_B = 14,000
IF $r_1 + r_2 < P_B$, NO PURCHASE
IF $r_1 + r_2 \geq P_B$, BUY BUNDLE


r_2
P_1
P_2
r_1
WHEN DEMANDS ARE PERFECTLY POSITIVELY CORRELATED,
BUNDLING GENERATES THE SAME REVENUE AS SELLING SEPARATED
MOVIES 1
MOVIES 2
A 12,000 4000 → 16,000
B 10,000 3000 → 13,000
$P_B = 13,000$ → TR = 2 · 13,000 = 26,000
$P_1 = 10000$
$P_2 = 3000$ → TR = 2 · 10,000 + 2 · 3000 = 26,000
P_B
WHEN DEMANDS ARE PERFECTLY NEGATIVELY CORRELATED,
BUNDLING LEADS TO HIGHER TOTAL REVENUE.


MIXED BUNDLING : SELLING TWO OR MORE GOODS BOTH AS A PACKAGE AND INDIVIDUALLY.
PURE BUNDLING : SELLING PRODUCTS AS A PACKAGE ONLY.
PROPOSITION #2 W/ POSITIVE MARGINAL COSTS, MIXED BUNDLING MAY BE MORE PROFITABLE THAN PURE BUNDLING.
LET'S SEE . . .



OPTION 1 : SELLING SEPARATELY

$P_1 = 50$, $P_2 = 90$

$\pi = \pi_1 + \pi_2 = 90 + 60 = 150$

OPTION 2 PURE BUNDLING

$P^B = 100$

$\pi^B = 4 \cdot (100 - 50)$

$= 4 \cdot 50$

$= 200$

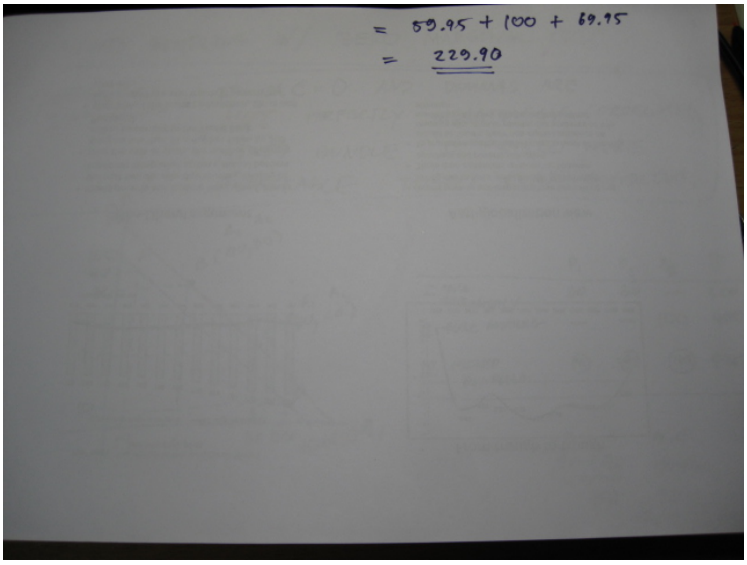
OPTION 3 MIXED BUNDLING

$P_1 = 89.95$, $P_2 = 89.95$ $P^B = 100$

- A WILL BUY ONLY GOOD 2.
- D WILL BUY 1.
- C AND D WILL BUY PACKAGE

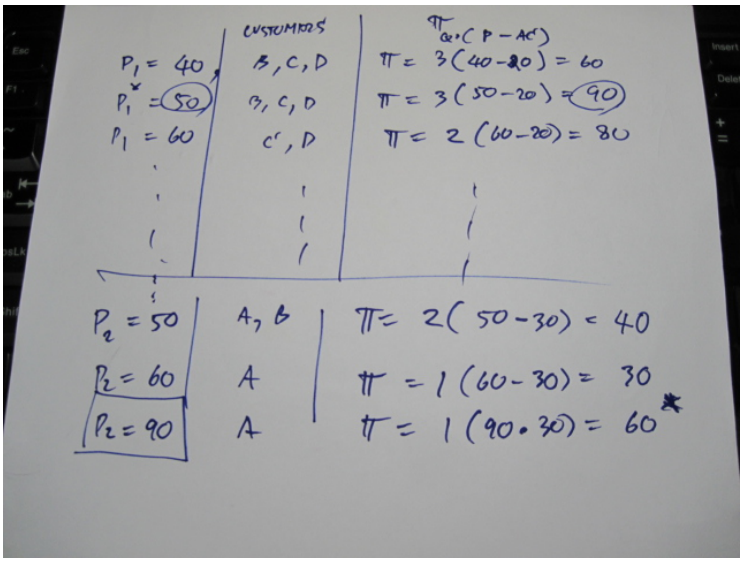
$\pi^M = \pi_A + \pi_B + \pi_C + \pi_D$

$= (89.95 - 30) + 2 \cdot (100 - 50) + (89.9$



$= 59.95 + 100 + 69.95$

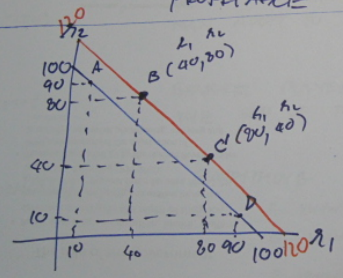
$= 229.90$



HOW TO FIND OPTIMAL P_1 AND P_2 FOR SELLING SEPARATELY

MIXED BUNDLING W/ ZERO MARGINAL COST

PROPOSITION #3 IF $MC = 0$ AND DEMANDS ARE NOT PERFECTLY NEGATIVELY CORRELATED, MIXED BUNDLE IS STILL MORE PROFITABLE THAN PURE BUNDLING.



	P_1	P_2	P_B	π
I SELL SEPARATELY	80	80	—	320
II PURE BUNDLING	—	—	100	400
III MIXED BUNDLING	(90)	(90)	(120)	420

D A B, C
90 + 90 110 + 110
180 240
420

GAME THEORY (OR THEORY OF GAMES)

PLAYERS : $n \geq 2$

ACTION : SET OF ACTIONS EACH PLAYER MAY ADOPT TO PLAY

PAYOFFS : BENEFITS PLAYERS OBTAIN AFTER THE END OF THE GAME.

INFORMATION : EVERYTHING PLAYERS KNOWS'

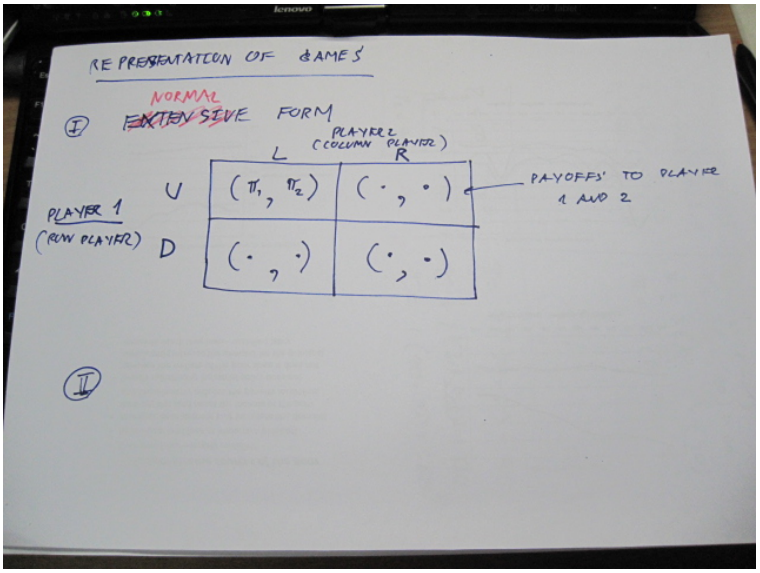
EX: A KNOWS THAT B IS RATIONAL.
B KNOWS THAT A IS RATIONAL.
A KNOWS THAT B KNOWS THAT A IS RATIONAL ——. AND SO ON ...
(WE WILL DISCUSS ABOUT THIS LA

A AND B UNDERSTANDS RULE OF THE GAME
- HOW PAYOFFS ARE DETERMINED
  EX: ○ WINS' ✂.
- SEQUENCE OF PLAY
  - SIMULTANEOUS MOVE
  - SEQUENTIAL MOVE

TYPES' OF GAME

① SIMULTANEOUS MOVE GAME : PLAYERS' MAKE DECISION AT THE SAME TIME
EX: ROCK - PAPER - SCISSOR
○ □ ✂
CLOSED - BID AUCTION

② SEQUENTIAL MOVE GAME : PLAYERS MOVE IN SEQUENCE
EX: CHESS, OX


REPRESENTATION OF GAMES
NORMAL
(I) EXTENSIVE FORM
PLAYER 2 (COLUMN PLAYER)
L
R
U
D
PLAYER 1 (ROW PLAYER)
(π_1, π_2)
(·, ·)
(·, ·)
(·, ·)
PAYOFFS TO PLAYER 1 AND 2
(II)