

Econ 384 - Midterm A

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Short Answer

① Lifetime indifference curve is tangent to the lifetime budget constraint.
 $MRS = \text{slope of budget constraint}$

② $U(c_1) > U(c_2)$

③ $HHI = \sum (\text{Market Share})^2$
 $= 10(10)^2 = 1,000$

④ → Leader can calculate your reaction
→ Leader can manipulate your reaction
→ Follower has lower Q and π .

⑤ Limit Pricing

→ By keeping prices low, the dominant firm can keep the competitive fringe small.

⑥ Vertical Differentiation - One brand/product is superior/inferior.
(ie) ipod vs. CD Walkman

Horizontal Differentiation - One brand/product is a poor substitute.

(ie) Coke vs. Pepsi.

Short Answer

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⑤ Dominant Strategy $\rightarrow$ Action that gives the highest payout regardless of opponent

Best Response $\rightarrow$ Action that gives the highest payout given opponent's action.

A player with a dominant strategy has a best response that never changes.

⑧

		B:	
		iii	iv
A:	i	(10, 10)	(0, 0)
	ii	(0, 0)	(10, 10)

⑨ "Tit-for-tat" $\rightarrow$ "I will do what you did last turn."

Goal: Encourage Co-operation /
Discourage Cheating

- ⑩
- (i) Players are ~~impatient~~
 - (ii) Interactions are ~~infrequent~~
 - (iii) Cheating is ~~hard~~ ^{easy} to detect
 - (iv) One-time cheating gain is relatively ~~large~~ ^{small}.

Part B

$$DPV = \frac{A(1-x^t)}{1-x}$$

$$\left(x = \frac{1}{1+r} = \frac{1}{1.05} = 0.9524 \right)$$

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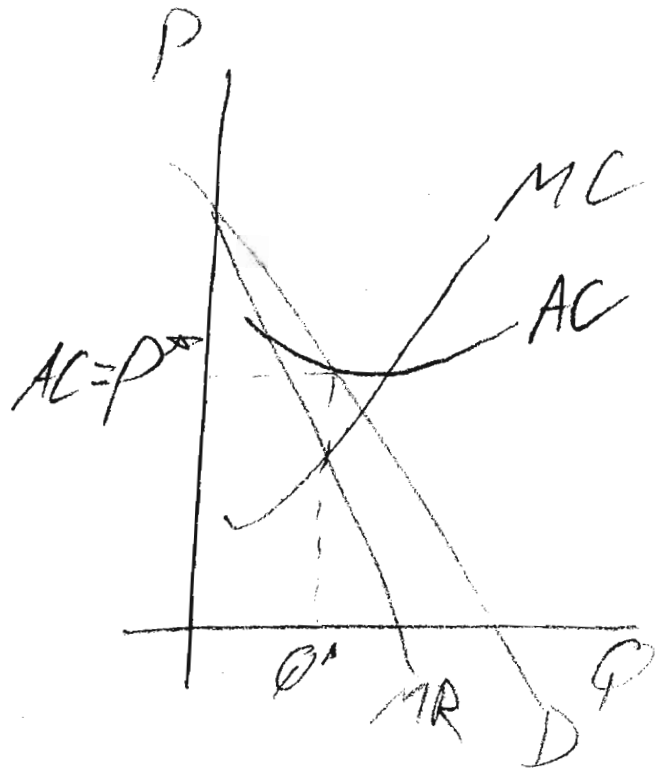
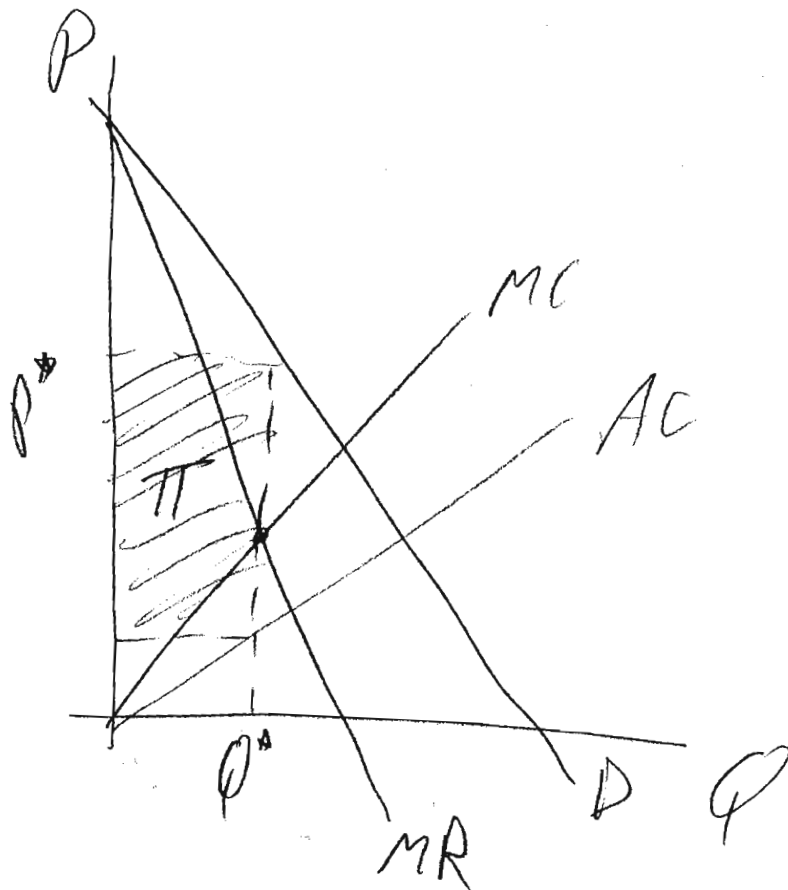
$$= \frac{\$5.75M(1-0.9524^{35})}{1-0.9524} = \frac{\$4.71M}{0.0476}$$

$$= \$98.9 \text{ Million}$$

$$\begin{aligned} \text{Net Benefit} &= \text{Benefit} - \text{Cost} \\ &= \$98.9M - \$333M \\ &= \textcircled{-\$234 \text{ Million}} \end{aligned}$$

② Short Run: Profits Possible

Long Run: Firms Enter
Zero Profit



PART C

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i P = 32 - Q₁ - Q₂

ii TR₁ = P Q₁ = 32 Q₁ - Q₁² - Q₂ Q₁

MR = $\frac{\partial TR_1}{\partial Q_1}$ = 32 - 2 Q₁ - Q₂

iii MR₁ = MC₁

32 - 2 Q₁ - Q₂ = 2

30 - Q₂ = 2 Q₁

$15 - Q_2/2 = Q_1$ By symmetry, $15 - Q_1/2 = Q_2$

iv $Q_1 = 15 - \frac{15 - Q_1/2}{2} = 7.5 + Q_1/4$

$3/4 Q_1 = 7.5$

$Q_1 = 10$ By symmetry, $Q_2 = 10$

v P = 32 - Q₁ - Q₂
= 32 - 10 - 10

P* = 12

vi $\pi_1 = (P - MC_1) Q_1$
= ($12 - 2$) 10

$\pi_1 = \$100$ By symmetry, $\pi_2 = \$100$

vii At a price of \$12, both firms produce 10 units each for a profit of \$100.

PART C

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(2)

		You	
		Call	Fold
Dave	Call	300, 50	250, 10
	Fold	50, 210	-150, -100

Best Responses: If Dave:
Folds Calls
I Call Call

If I:
Fold Call
Dave Calls Calls

Dominant Strategies: Dave: Call
You Call

Dominated Strategies: Dave: Fold
You: Fold

Nash Equilibrium: (Call, Call)