

DBASIOI Monework 2

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1.1 Case 1: Firm uses uniform price in both markets

Let the common price be P

Q_A=D_A-d_AP, P=O_A/d_A (Q_{con}t) Q_B=D_B-d_BP, P=O_B/d_B (be-re

Here, Da, Da, da, da > 0

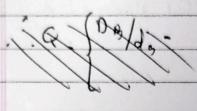
Without any loss of generality, we can assume that

 $\frac{D_{A} \leq D_{B}}{J_{A}} \leq \frac{D_{B}}{J_{B}}$

: MC: c, o < c < DA/dA

Naw, G = GA+ GB





$$Q = \begin{cases} D_{B} - d_{B} P, & \alpha/d_{A} < P \leq D_{B}/d_{A} \\ (D_{A} + D_{B}) - (d_{A} + d_{B}) P, & P \leq D_{A}/d_{A} \end{cases}$$

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$$R = \begin{cases} Q(0) & A = Q^2 / A_B, & Q \leq \alpha \\ Q(0) & A = Q^2 / A_B, & Q \leq \alpha \end{cases}$$

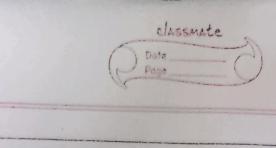
$$Q(0) & A = Q^2 / A_B, & Q \leq \alpha$$

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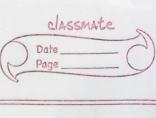
$$Q(0) & A = Q^2 / A_B, & Q \leq \alpha$$

$$\frac{1}{1000} = \begin{cases} \frac{0}{9} \frac{1}{4} = \frac{2}{9} \frac{1}{4} = \frac{2}{9} \\ \frac{0}{4} = \frac{2}{9} = \frac{2$$

Setting MR=MC,



 $\alpha < Q_{\epsilon} < \alpha$

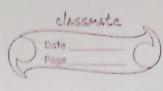


$$\frac{\partial}{\partial x} = \frac{\partial}{\partial x} = \frac{\partial}$$

= (Dn-doc)

4ds

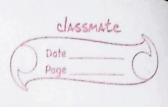
Since Q < a, only market B is artine



5 dring for (2) QE = DA-DAC + DB-DBC Mowerer, this rolution is only valid if 0 < c < max (MR), where MR = Da+DB - 2Q , QDA

da+dB da+dB Since MR is a negatively sloped bies curre, mon (MR) < Dp+DB - 2Q

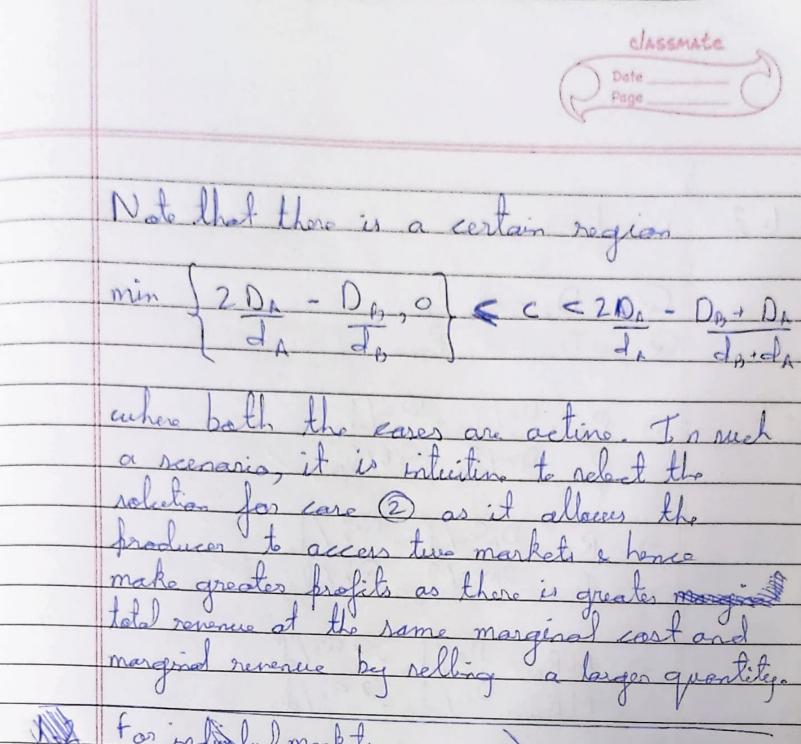
do+dB do+dB Q= a Let this upper bound be B

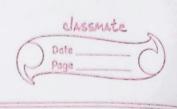


$$= D_{A} + D_{B} + d_{A} C + d_{B} C$$

$$= 2(d_{A} + d_{B})$$

$$= \frac{\left(D_A + D_B - d_A c - d_B c\right)^2}{4\left(d_A + d_B\right)}$$





1.2 We have

QA = DA - da PA QB = DB - da PA

Da/Da/Da

Pa = Da/2 - Ca/2 - CB/DB

=> R = DAGA/J = Q2/JA RB = DAGA/J = Q2/JB

=> MR = DA/dA = 2 PA/dA
MR = DA/dA = 2 PA/dA

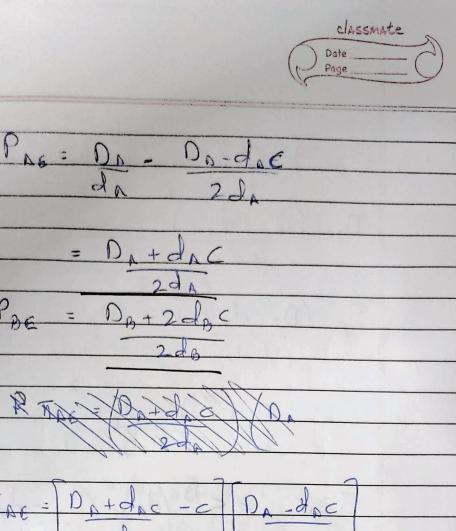
MRg= Un/dg- 29/dg

Equating MR=Mc for each market separately,

Da-29ag - c DB-29Bg = c

-) GAG = DA-dAC

Q₀ = D₀ - d₀ < 2



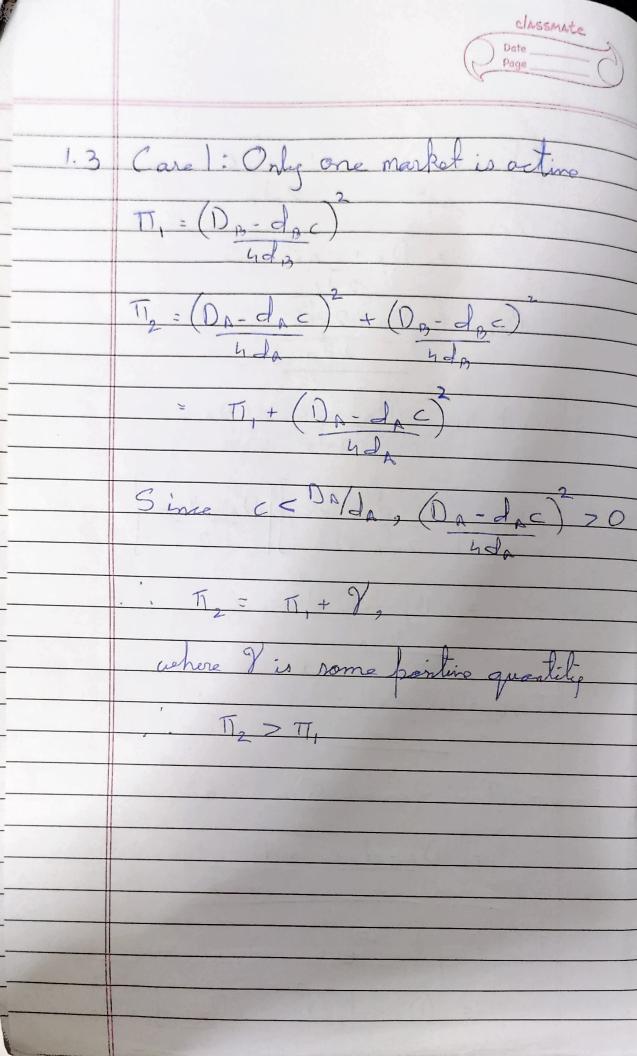
= DA+dAC

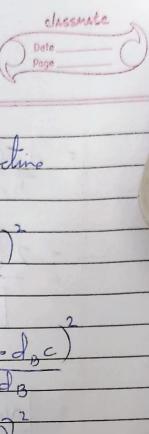
MAE = DA+dac -c DA-dac]

= (0, -d,c) TBE = (Dg-dgc)

Total Quantity QE = DA-dac + Da-dac

Total Profit TE = (Da-dae) + (Da-dae)





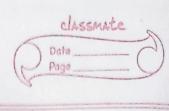
Case 2: Both markets are acting

T2 = (D, -d, c) + (D, -d, c) 4dB

= (Da-dac) + (Da-dac) + 2 (Da-dac) (Da-dac) + (Da-dac) + 2 (Da-dac) (Da-dac) + 2 (Da-dac) (Da-dac) + 2 (Da-da = (DA-dac) + (DA-dac) - (Da-dac) - (Da-dac) 72 (na-dac) (Da-dac) 4 (da+da) 4 (da+da) 4 (da+da)

= (Da-dre) | - | y da dately

+ (Dr, -dr, c) | - | dr dr+dr



= do (Do-doc) + do (Do-doc) 1

4do (do+do) 4do (do+do) - 2 [A, (D, -A, c)] [[[O, -d, c)] [2 da Sarta] 2 da Sarta = \[\sqrt{d_B} \left(D_A - d_{AC} \right) \] \[\sqrt{d_A} \left(D_A - d_{AC} \right) \] \[\sqrt{2 \left{d_A} \left(d_{A} + d_{BC} \right)} \] T2- T1 > 0 Casitis a rapare of rome

Equality occurs when DB = DB in which da IB
care both the markets are identical and price discrimenation is not passible. Hence, it is trivial

, T₂ > T,

Mone prend