

1)

2 Firms

→ Price function →

$$Price = x - (q_1 + q_2)$$

→ cost function

$$Cost_n = y + z q_n$$

2)

Firm's quantity

for each firm, you solve ^{for} the max profit

$$\pi_1 = p q_1 - c(q_1)$$

$$\pi = \text{profit} = q_1 [x - (q_1 + q_2)] - q_1 (y + z q_1)$$

$$\pi_{\max} = \frac{d\pi_1}{dq_1} = (-2z - 2)q_1 - y + x - q_2 = 0$$

$$\Rightarrow q_1 = \frac{(y + q_2 - x)}{-2z - 2}$$

* do it for every firm.

dynamic

x, y, z

q_{n1}, q_{n2} : quantity

3) Calculating profit for each firm.

a) calculate the value of $\pi_1, \pi_2, \pi_3 \dots \pi_n$

b) calculate the market price using the π_n

c) calculate total Q, $Q = \sum q$

d) calculate the total profit $\Pi = \pi_1 + \pi_2 + \dots$

e) compare this answer to a Monopoly -
Monopoly $\Pi >$ correct game Π