Exercise walk-through

# 5.2.1 Market structures, concentration and monopoly (cut of 5.2)

Pearson Edexcel · International A-Level · Economics

# Business objectives (2)

- **satisficing** : in Herbert Simon's theory, managers aim for a result that is "good enough" for all the groups they must keep happy, not the maximum.
- The firm's demand (average revenue) is $P = 70 - Q/2$, so $TR = 70Q - Q^2/2$ and $MR = 70 - Q$. For a straight-line demand curve, MR is twice as steep as AR.
- At $Q = 40$: $P = 50$, $TR = 2000$ and $MR = 30$, still positive.
- Revenue is greatest where $MR = 0$: $Q = 70$, $P = 35$, $TR = 2450$ — the point where PED is $-1$, as in Unit 1.

# Data-response practice (Section B style)

- (a) Using the table, calculate the three-firm **concentration ratio** and identify the market structure it suggests. [2]
- (b) Explain why Microsoft's purchase of Activision could be described as vertical integration. [4]
- (c) With the help of a diagram, explain why less competition could lead to higher prices for consumers. [6]

# Common errors

- Producing where MR = 0 when the question asks for **profit maximisation**. **Profit** is greatest where MR = MC.
- Reading the **monopoly** price off the MC or MR curve. Go up from $Q_m$ to the demand (AR) curve.
- Forgetting that normal profit is included in costs, so "zero economic profit" still means the owner earns a normal return.

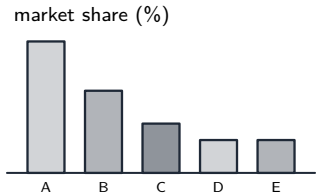
# Exercises 2.1·2.2

**2.1** Define allocative and productive efficiency. [2]

allocative efficiency

productive efficiency

**2.2** Market shares are 40, 25, 15, 10 and 10 percent. Calculate the four-firm concentration ratio and interpret it. [3]



# Exercises 2.1·2.2

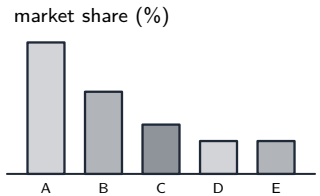
**2.1** Define allocative and productive efficiency. [2]

allocative efficiency

productive efficiency

**2.1** Allocative: price equals marginal cost ($P = MC$) – output matches what society values. Productive: production at minimum average total cost.

**2.2** Market shares are 40, 25, 15, 10 and 10 percent. Calculate the four-firm concentration ratio and interpret it. [3]



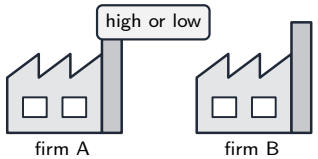

**2.2** CR4 $= 40 + 25 + 15 + 10 = 90\%$: the four largest firms hold 90 percent – a highly concentrated market with substantial market power (caveat: ratios miss imports and potential entry).

# Exercises 2.3·2.4

**2.3** State the four assumptions of perfect competition and the long-run outcome for price and profit. [3]

many firms | identical products | free entry | perfect information

**2.4** In the game matrix, what is the Nash equilibrium and why is collusion unstable? [3]



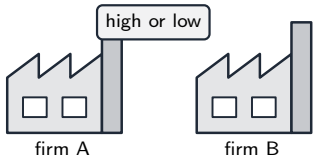
# Exercises 2.3·2.4

**2.3** State the four assumptions of perfect competition and the long-run outcome for price and profit. [3]

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**2.3** Many small firms; identical products; perfect information; free entry and exit. Long run: entry drives price to minimum ATC, so only normal profit remains, with both allocative and productive efficiency.

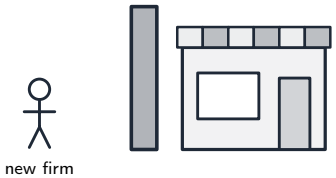
**2.4** In the game matrix, what is the Nash equilibrium and why is collusion unstable? [3]




**2.4** The Nash equilibrium is (defect, defect) = (2, 2): whatever the other does, defecting pays more ($6 > 4$ if the other colludes; $2 > 1$ if it defects), so both defect. Collusion (4, 4) is unstable because each has a profitable incentive to cheat – and collusion may be illegal.

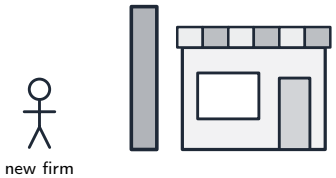
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**2.5** Name any four barriers to entry from the specification. [2]



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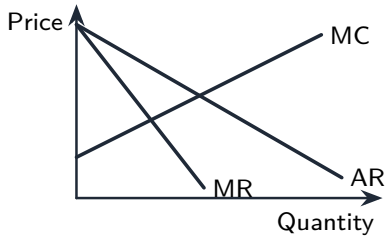
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**2.5** Any four of: economies of scale; limit pricing; patents; branding; sunk costs; legal barriers.

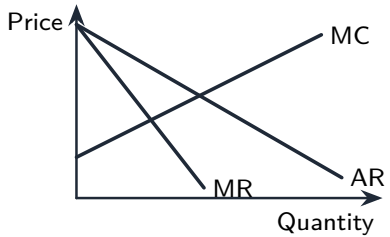
# Exercise 3.1

**3.1** *(Original.)* On the model AR: $P = 70 - Q/2$, MR: $P = 70 - Q$, MC: $P = 10 + Q/2$: calculate the monopoly output and price, the supernormal profit if ATC $= 30$ at that output, and the deadweight loss against the competitive outcome. [5]



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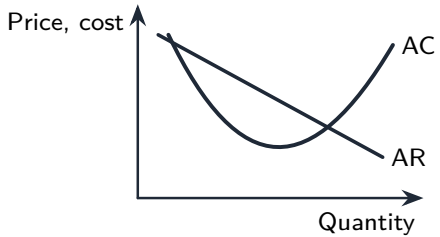



**3.1** Monopoly: $70 - Q = 10 + Q/2$ gives $60 = 1.5Q$, so $Q_m = 40$; price on AR: $P_m = 70 - 20 = 50$. Supernormal profit $= (P - ATC) \times Q = (50 - 30) \times 40 = 800$ per day. Competitive: $70 - Q/2 = 10 + Q/2$ gives $Q_c = 60$, $P_c = 40$. Deadweight loss $= \frac{1}{2} \times (60 - 40) \times (50 - 30) = \frac{1}{2} \times 20 \times 20 = 200$ – the value of output between 40 and 60 whose marginal benefit (AR) exceeded its marginal cost.

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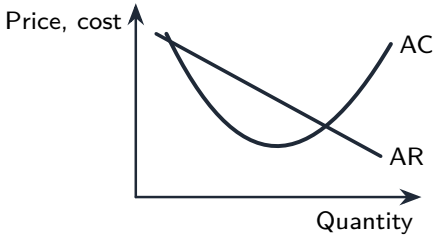
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**3.2** Short run: differentiated products give each firm a downward-sloping demand curve; if price exceeds ATC it earns supernormal profit. Entry of close substitutes shifts each firm's demand LEFT and makes it more elastic until the demand curve is tangent to ATC: price equals ATC (normal profit only) but exceeds MC – excess capacity, so not allocatively efficient, and output is below min ATC, so not productively efficient either.

# Exercise 3.3

**3.3** *(Original.)* What conditions are needed for third-degree price discrimination, and who gains and loses? [4]



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**3.3** Conditions: market power (price-setting ability); separable groups with DIFFERENT price elasticities; no resale between groups (plus a means of separating them). Gainers: the firm (converts consumer surplus into profit; total output may rise). Losers: the inelastic group pays more; the elastic group may pay less – overall, allocative efficiency usually falls.

Local review guidance: the MR = MC equation solved before either price is read; the DWL uses the gap between AR and MC over the lost output; (R1 3.3) gains and losses split BY GROUP, not in aggregate. This is authored classroom guidance.