

4 things should be able to do by end of class today

01

Characterize a
perfectly
competitive
market structure

02

Know and apply
the PROFIT
MAXIMIZING
RULE

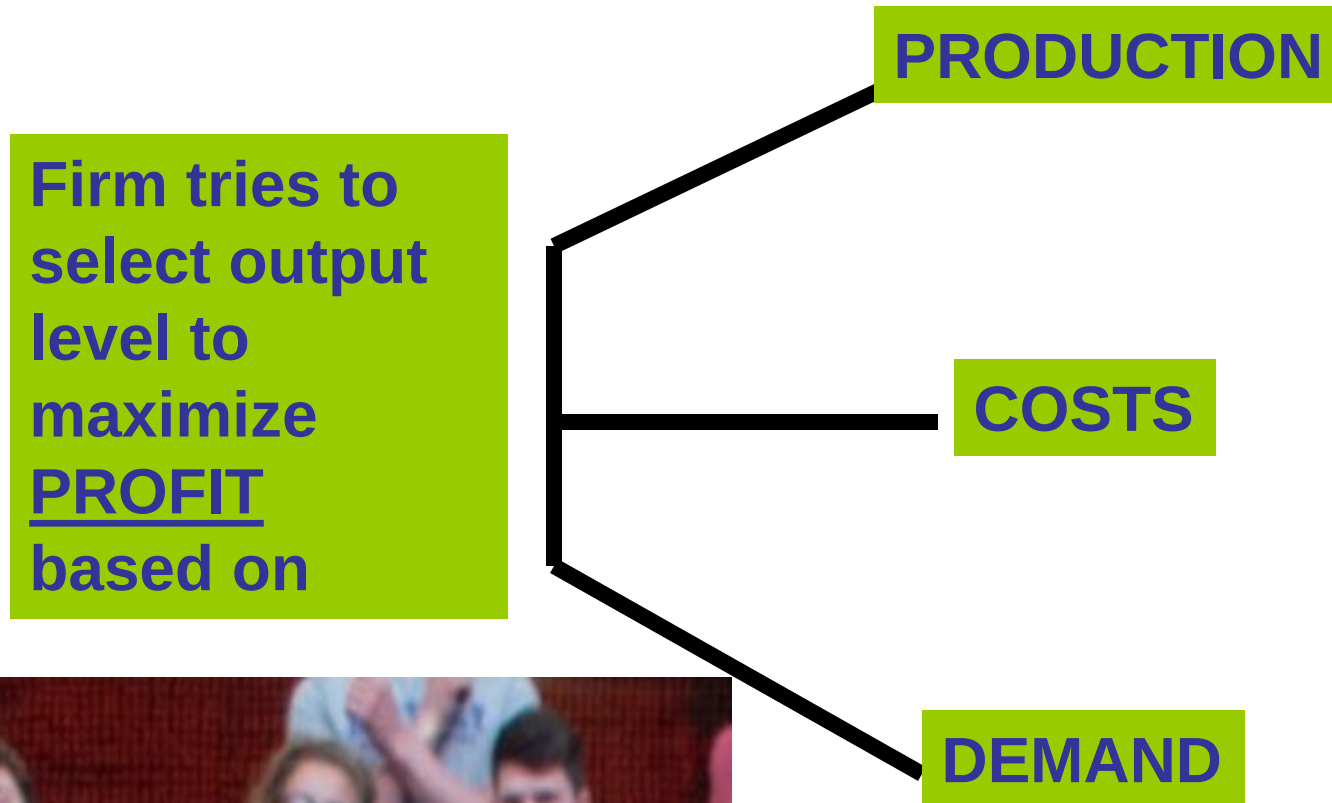
03

Determine from a
graph if a firm is
making a profit,
breaking even, or
suffering a loss

04

Apply the SHUT
DOWN RULE

Firm Behavior and the Organization of Industry
Chapter 14 Firms in Competitive Markets, p. 195.
I. Introduction to Market Structure



Market Structure, p. 195

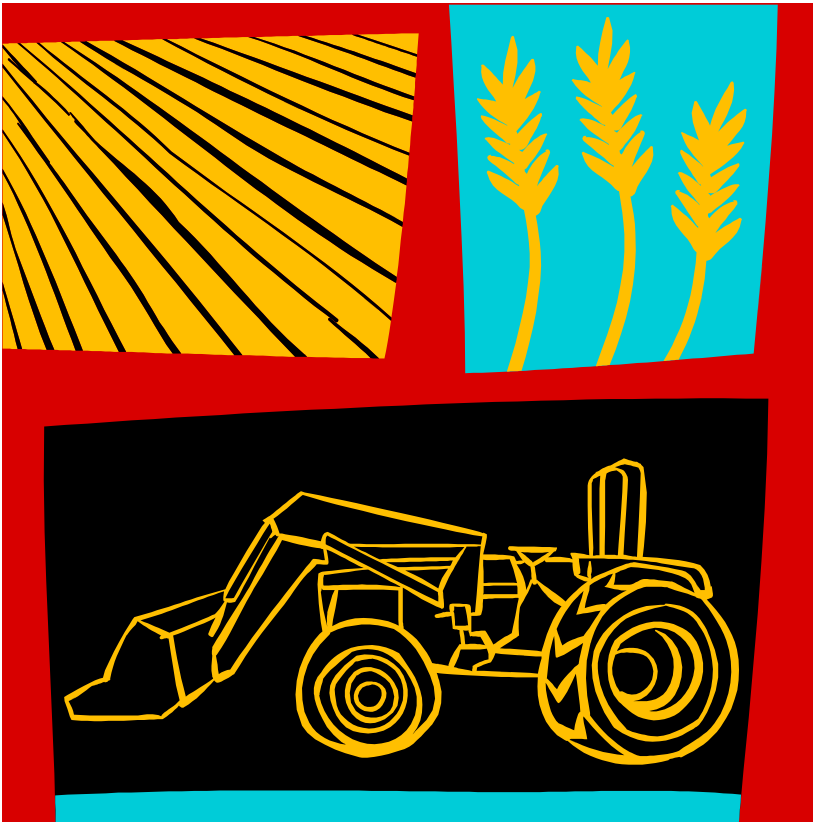


II. Characteristics of Perfect Competition, p. 196



- 1) All firms sell identical (homogeneous) product
wheat farmers, film developing, dairy farmers
- 2) Consumers are indifferent to different sellers
- 3) Many sellers or firms
- 4) Firms are price takers
Market share isn't large enough to affect the market price
NO MARKET POWER

Characteristics of Perfect Competition



5) Free entry and exit - no barriers to entry or exit such as

-exclusive control of a resource

-unusually high start up costs

6) Instantaneous entry and exit

7) Complete Information

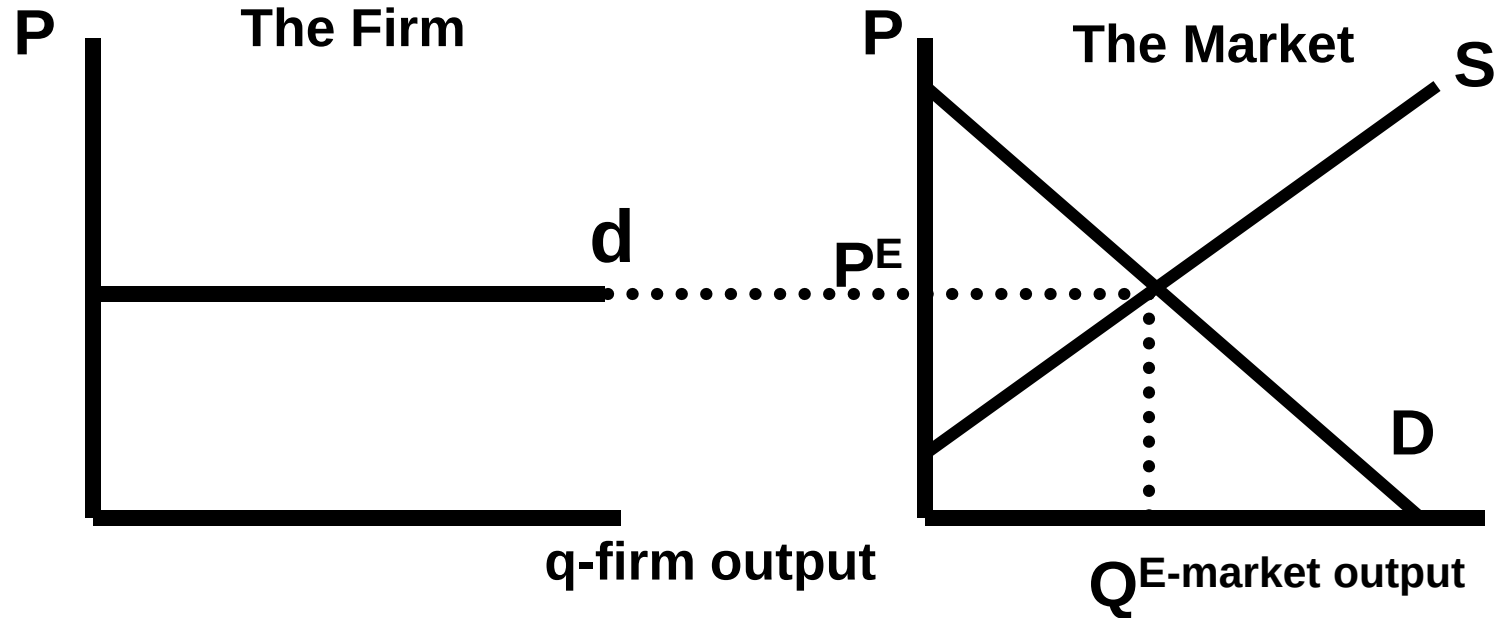
8) Firms maximize profits

- no firms operating charitably

*Market forces operate unimpeded.

“Ideal” market structure

III. Perfect Competition Graphically, p. 197



Each firm's demand curve is perfectly elastic at P^E .

Change in q of any firm is not enough to affect D in market or P^E

(1)	(2)	(3)	(4)	(5)
Quantity (Q)	Price (P)	Total Revenue ($TR = P \times Q$)	Average Revenue ($AR = TR / Q$)	Marginal Revenue ($MR = \Delta TR / \Delta Q$)
1 gallon	\$6	\$6	\$6	
2	6	12	6	\$6
3	6	18	6	6
4	6	24	6	6
5	6	30	6	6
6	6	36	6	6
7	6	42	6	6
8	6	48	6	6

Revenue for the firm (page 197)

- Total Revenue = $TR = P^E \times q$
- Marginal Revenue: Revenue from selling one more unit of the good
- $MR = P^E$
- if $P^E = \$10$, if we sell 20 units
- $TR = 10(20) = \$200$
- $AR = \text{average revenue} = TR/q = 200/20 = \10
- What is marginal revenue (MR)?

IClicker – REEF POLLING



1. What is the value of marginal revenue?

A. \$5

B. \$10

C. \$20

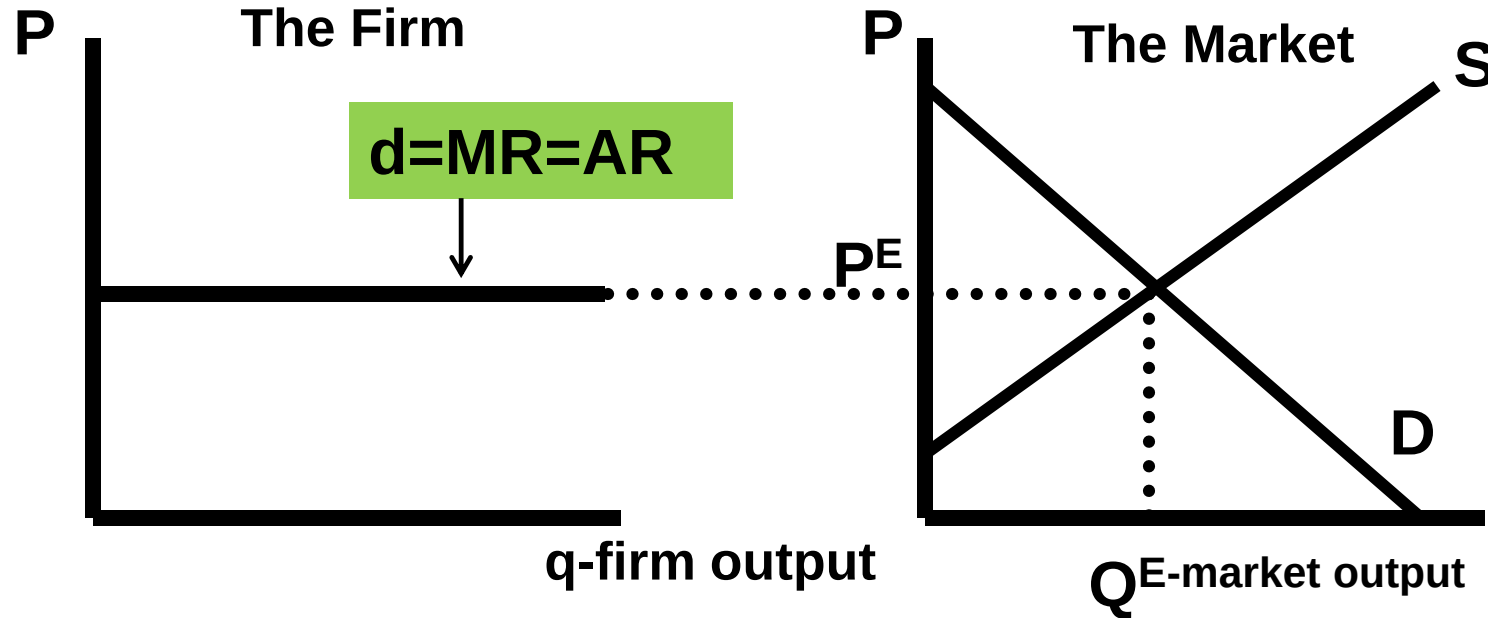
D. \$200

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- $AR = \text{average revenue} = TR/q = 200/20 = \10
- What is marginal revenue (MR)?
- $AR = MR = P^E = \$10$

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Quantity (Q)	Total Revenue (TR)	Total Cost (TC)	Profit ($TR - TC$)	Marginal Revenue ($MR = \Delta TR / \Delta Q$)	Marginal Cost ($MC = \Delta TR / \Delta Q$)	Change in Profit ($MR - MC$)
0 gallons	\$ 0	\$ 3	-\$3			
				\$6	\$2	\$4
1	6	5	1	6	3	3
2	12	8	4	6	4	2
3	18	12	6	6	5	1
4	24	17	7	6	6	0
5	30	23	7	6	7	-1
6	36	30	6	6	8	-2
7	42	38	4	6	9	-3
8	48	47	1			

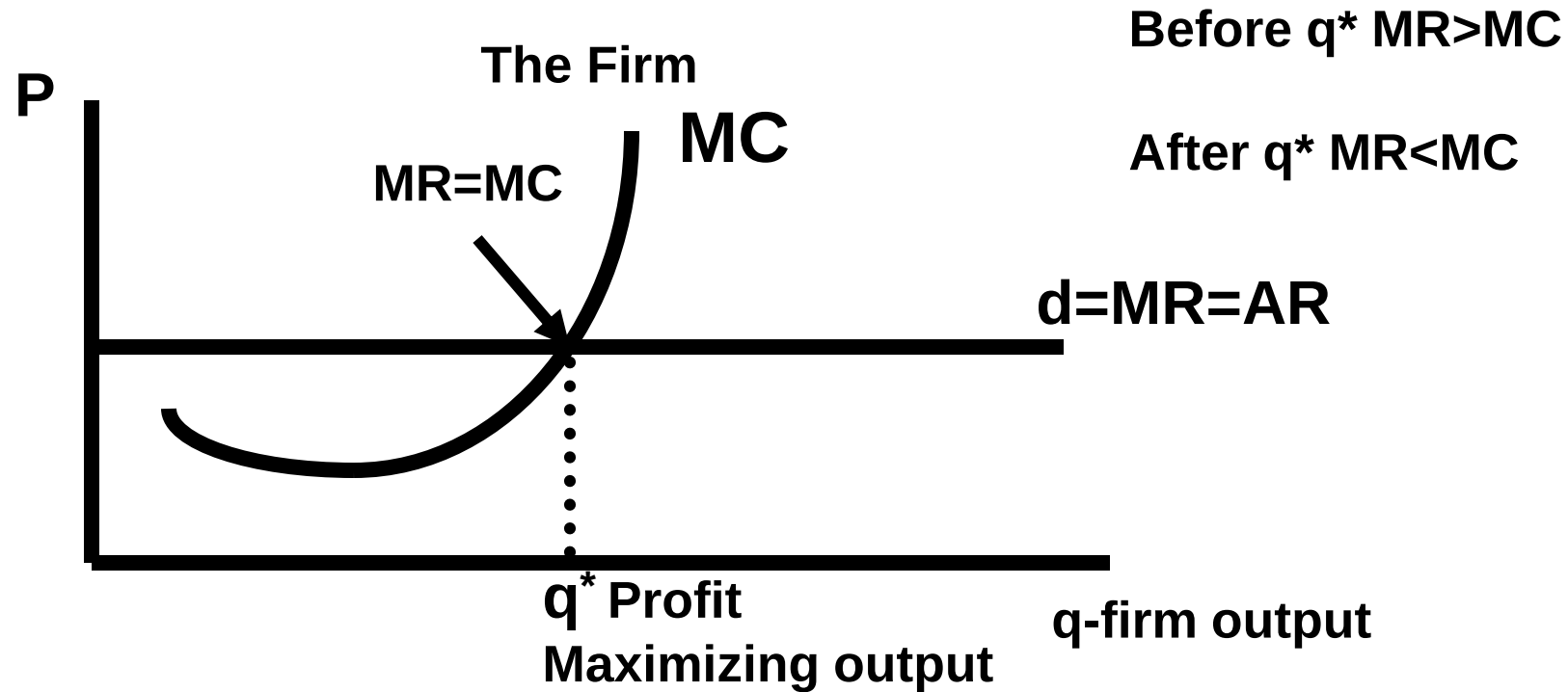
III. Perfect Competition Graphically, p. 197



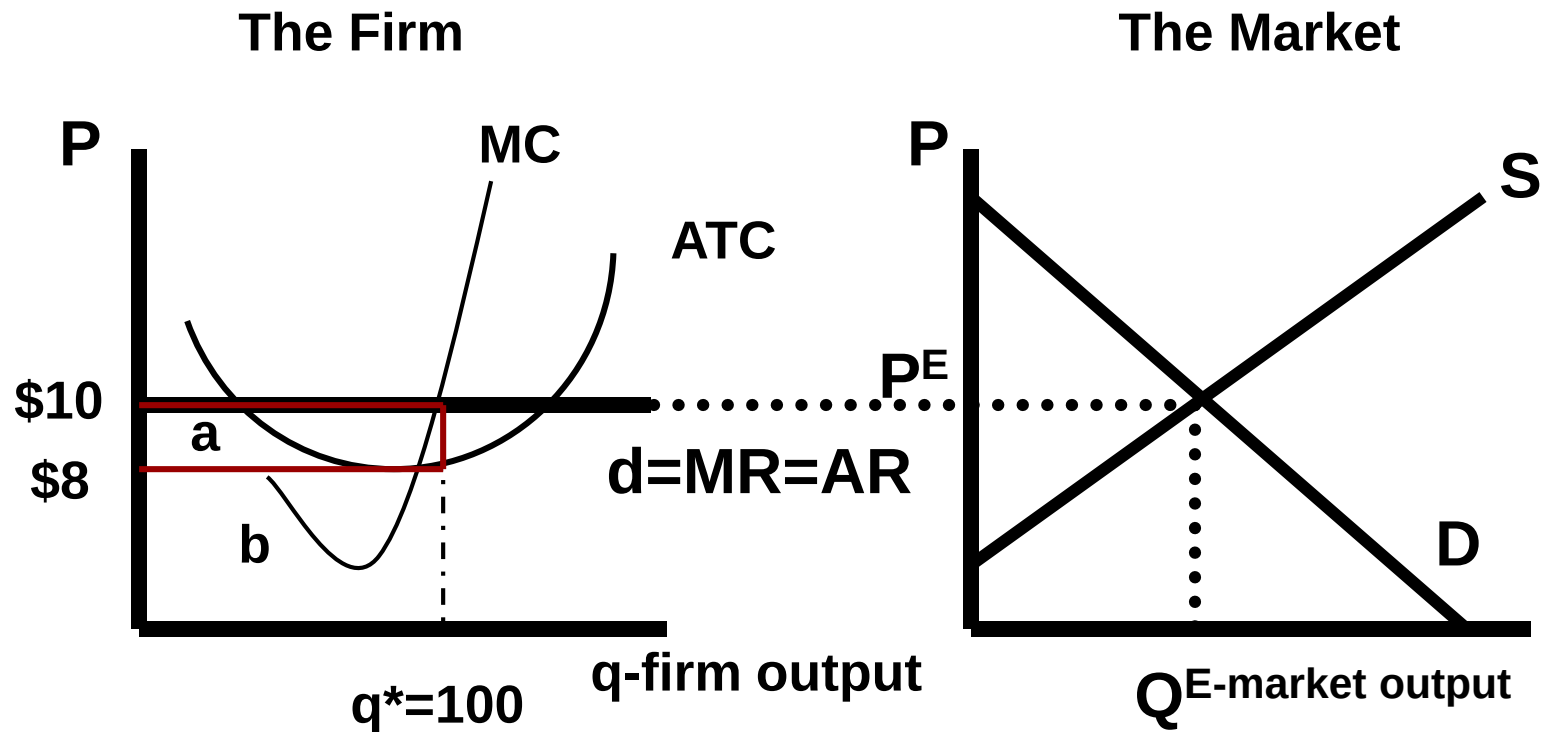
Each firm's demand - perfectly elastic at P^E

Change in q of any firm not enough to affect market D or P^E

IV. Short-Run Equilibrium, p. 198



- Profit = $TR - TC$
- To maximize profit, pick output at $MR=MC$
- The Profit Maximizing Condition

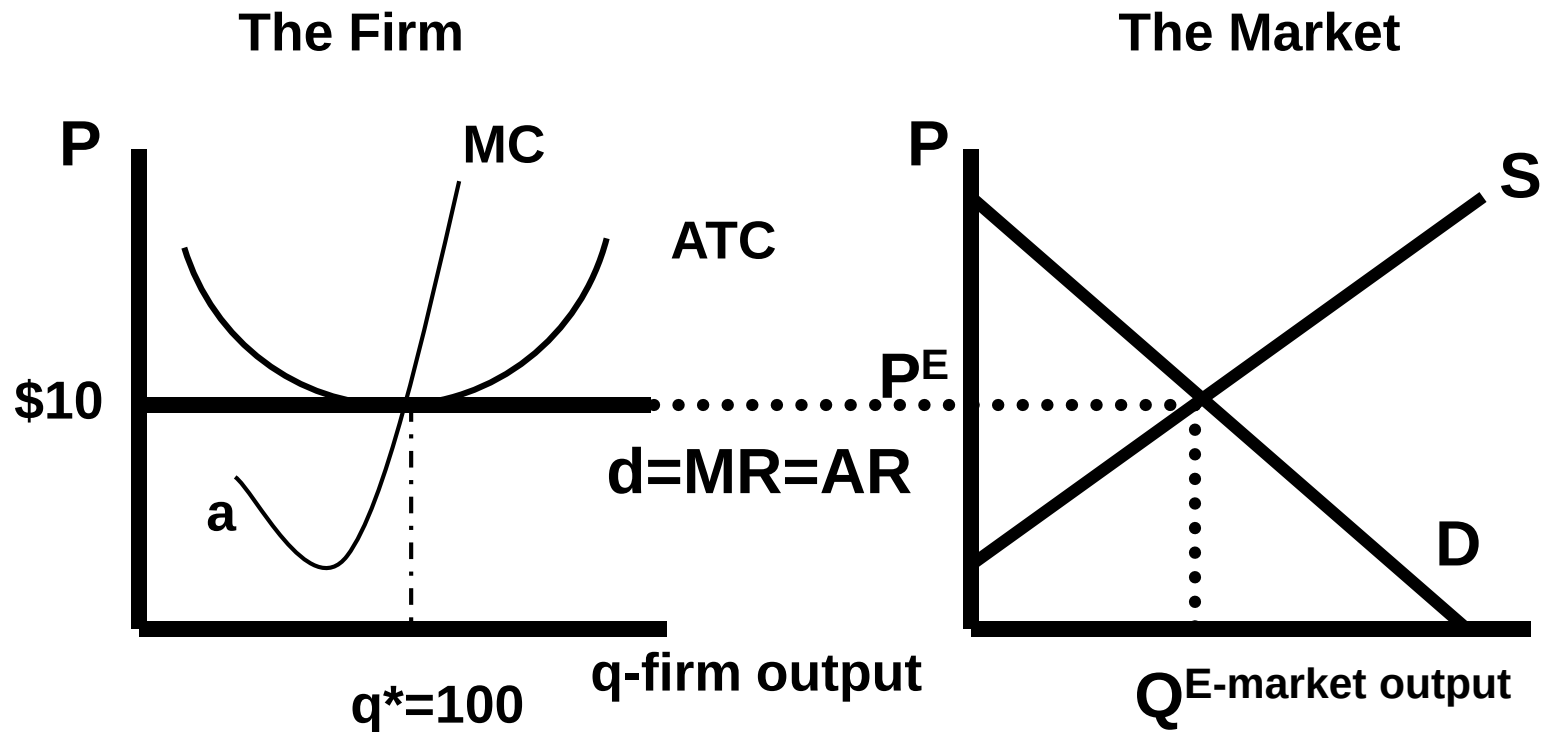


Profit = $P^E * q^* - (ATC)q^* = (\text{box a})$

box a and b – box b

$$(\$10) \times 100 - \$8 \times 100 = \$200$$

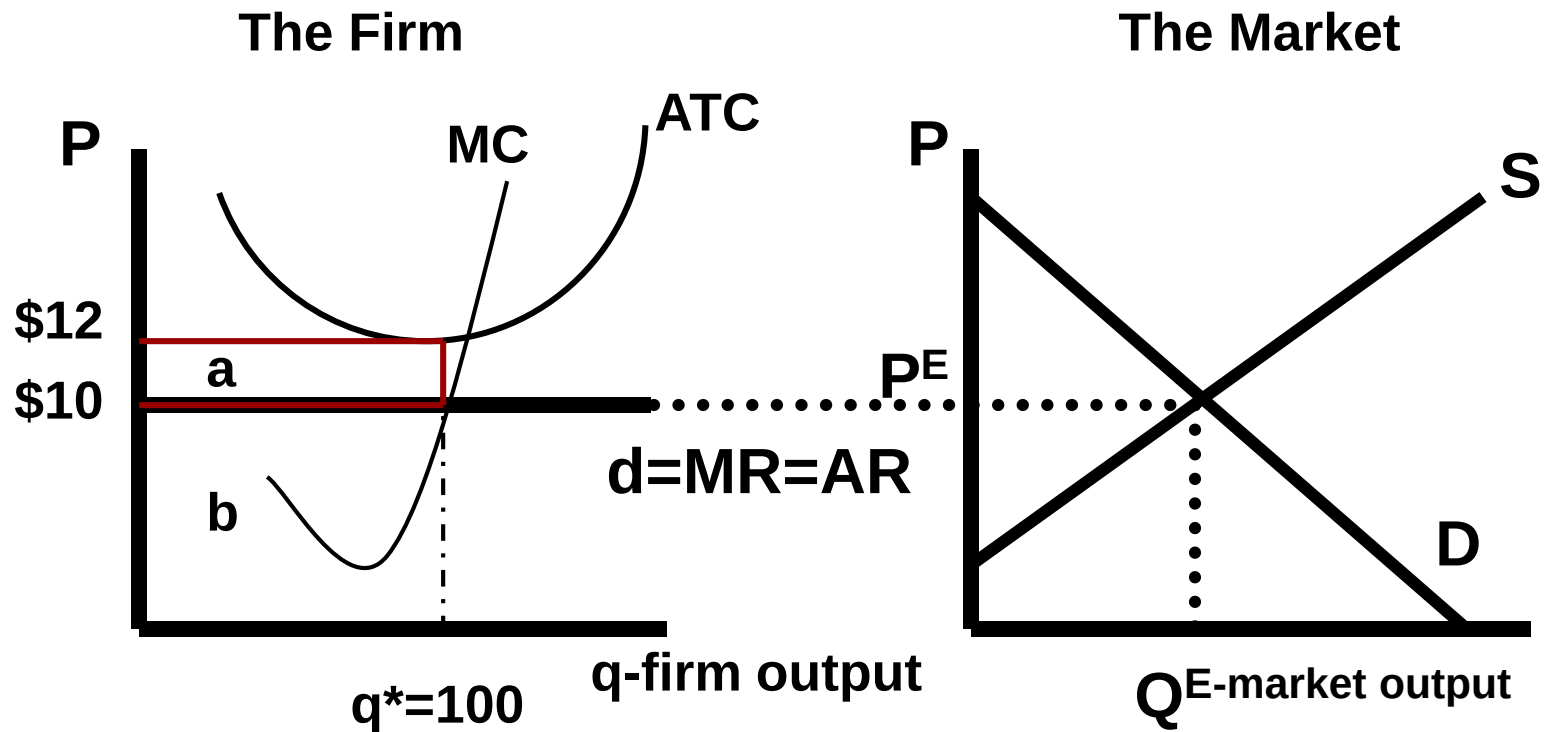
A) A firm earning a positive economic profit (p.199)



$$\text{Profit} = P^E * q^* - (ATC)q^* = \$0$$

box a – box a

B) A firm earning a zero economic profit (breaking even), p. 199 in packet



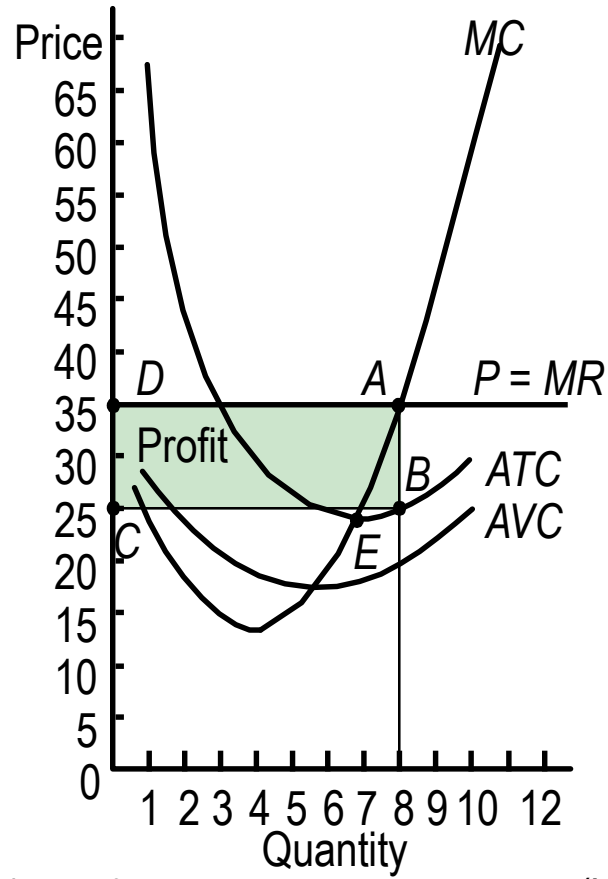
$$\text{Profit} = P^E * q^* - (ATC)q^* = (\text{LOSS})$$

box b – box a and box b

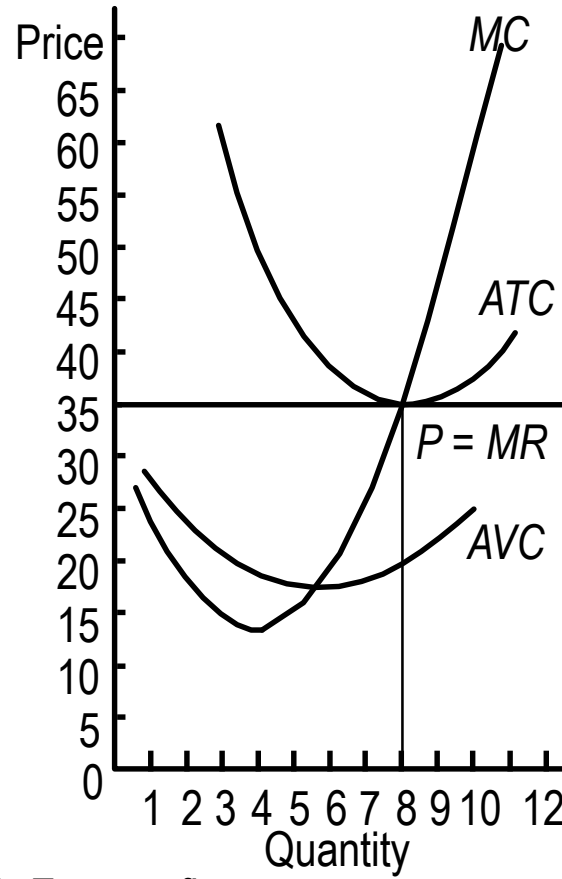
$$\$10 \times 100 - \$12 \times 100 = -\$200$$

C) A firm earning a negative economic profit (p.200)

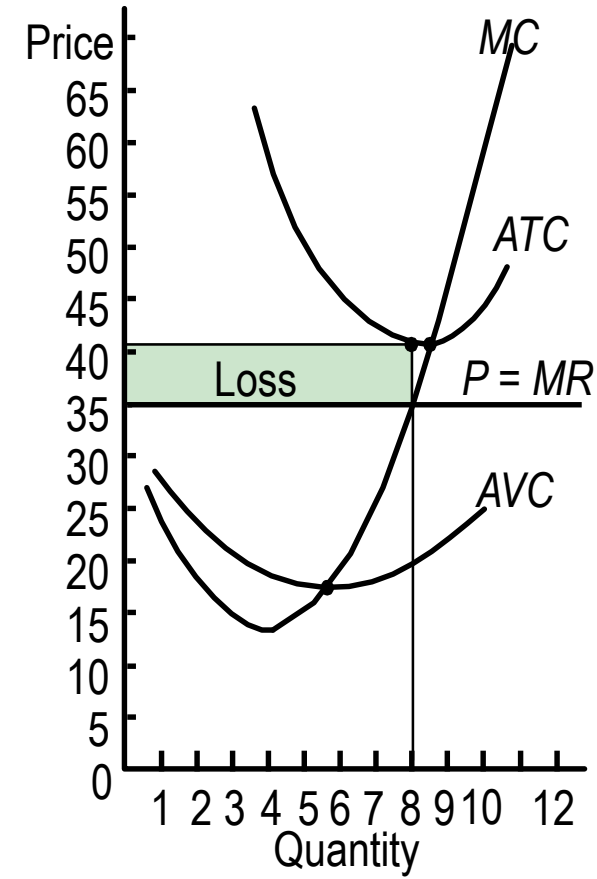
Review-Determining Profits Graphically(pp.199-200)



(a) Profit case



(b) Zero profit case



(c) Loss case

What
should a
firm do if
suffering a
loss?



The Shut Down Rule (p. 201)

Example

$$TR = \$30,000$$

$$TVC = \$10,000 \text{ and } TFC = \$50,000$$

Should the firm produce or shut down?

If they produce the profits are:

$$\begin{aligned} \text{Profit} &= TR - TC = 30,000 - (10,000 + 50,000) \\ &= -30,000 \text{ (LOSS)} \end{aligned}$$

If they shut down:

- $$\begin{aligned} \text{Profit} &= TR - TC = 0 - 50,000 \\ &= -50,000 \text{ (LOSS)} \end{aligned}$$

The Shut Down Rule, p. 201

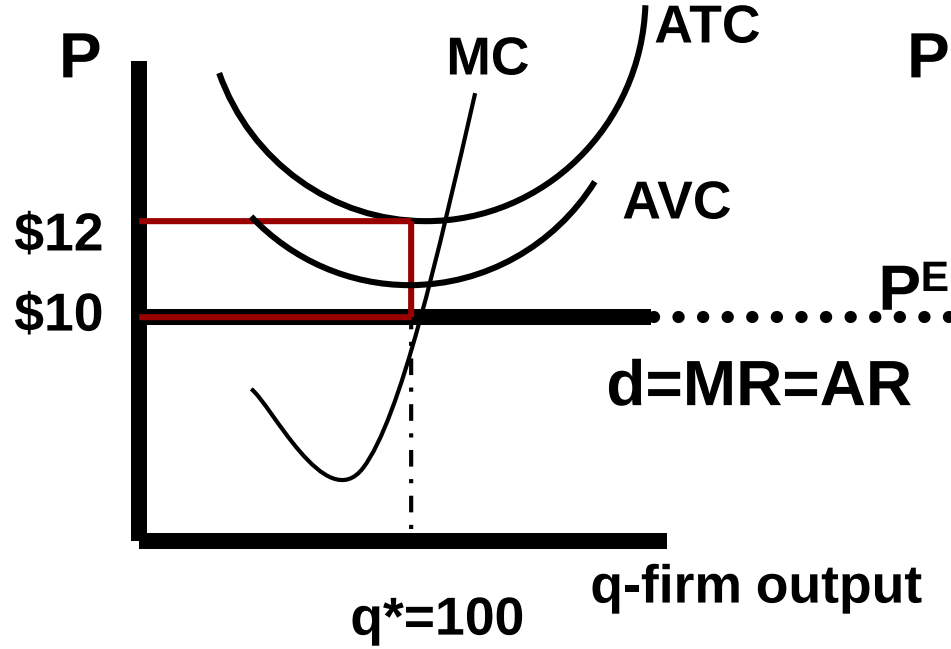
- Apply rule when suffering loss $P < ATC$ (LOSS)
- If $P > AVC$ Keep producing
- If $P < AVC$ Shutdown
- A business that applies the rule every day?
- Car Wash
- Gatlinburg

IClicker – REEF POLLING

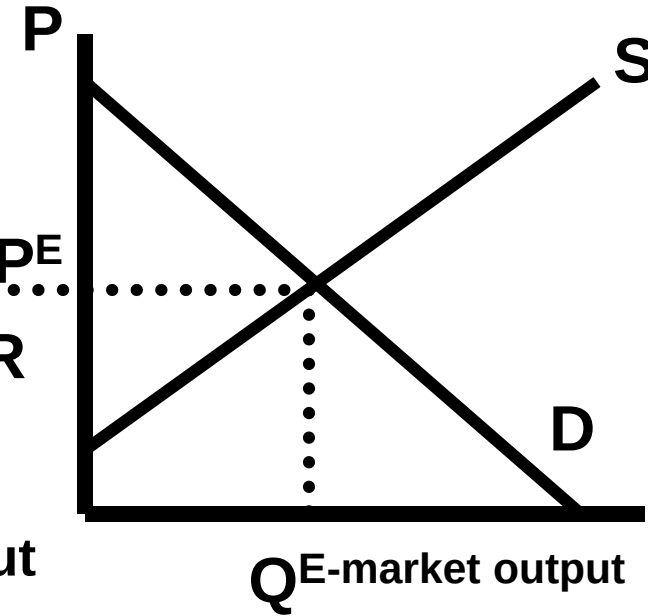


(Page 201 in packet) 2) Should this firm shut down?

The Firm



The Market



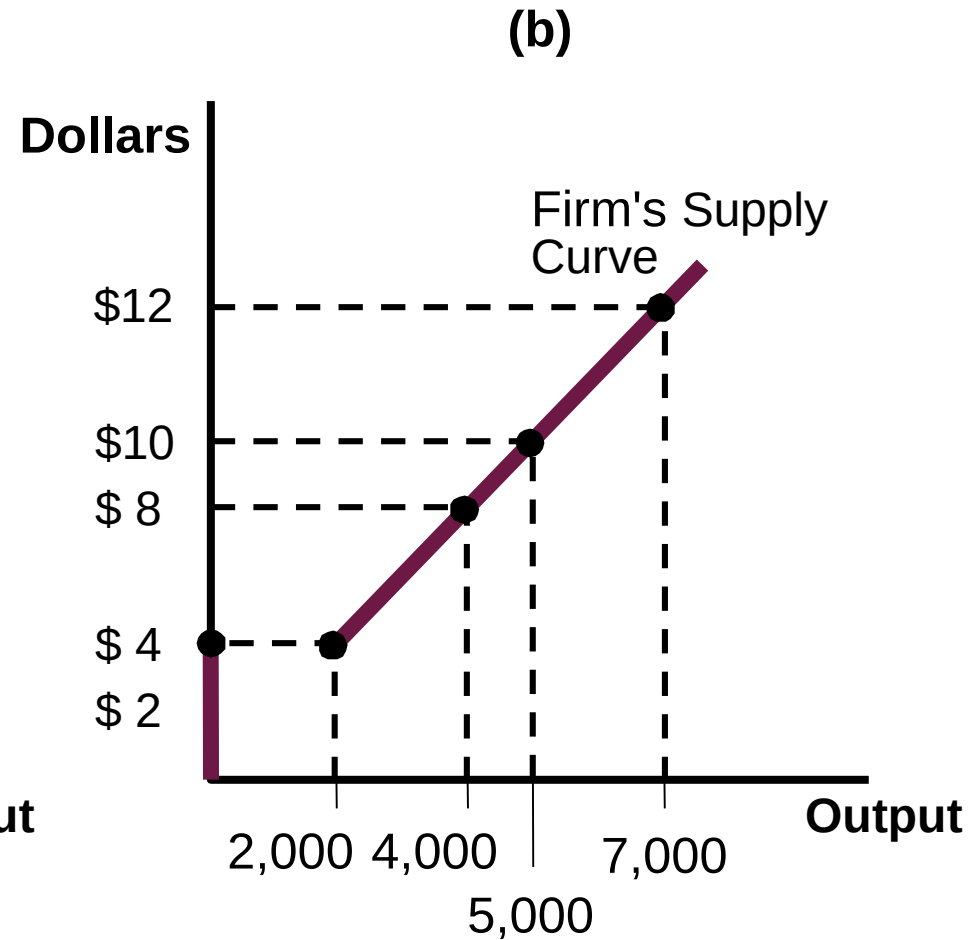
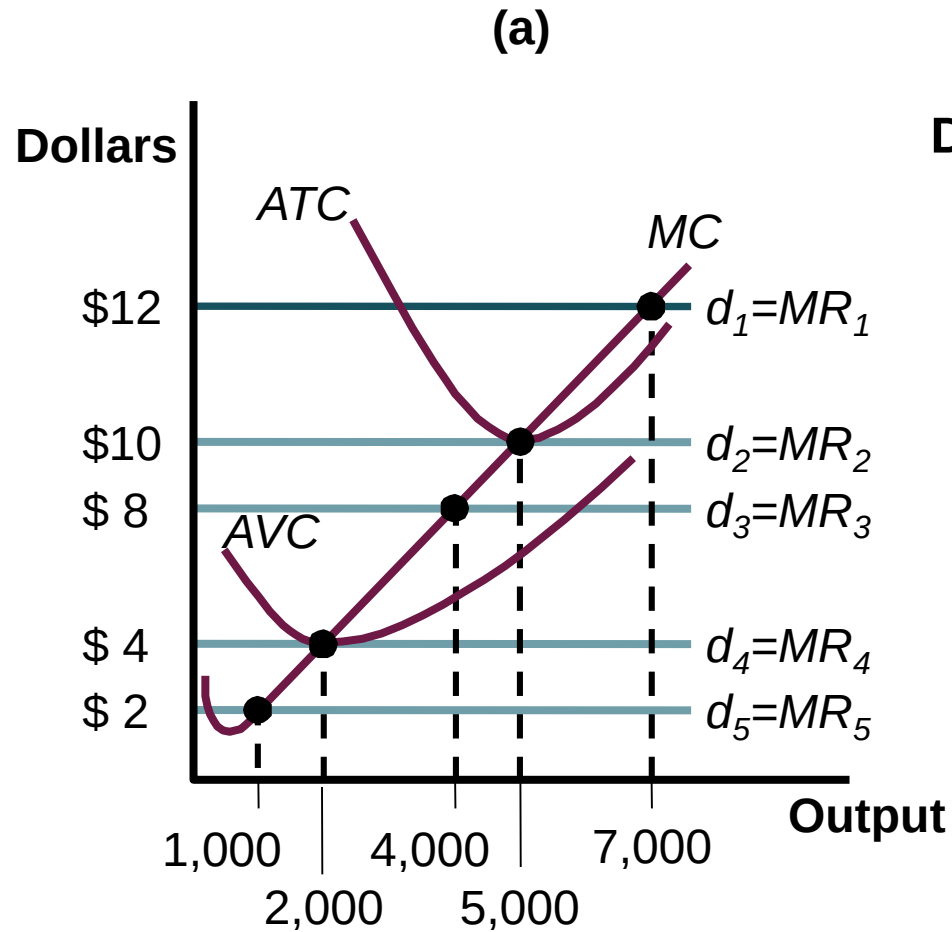
A. YES
B. NO

Shut down is a temporary decision

If we expect $P < ATC$ indefinitely we get out of business (LR decision)

Short-Run Supply in Perfect Competition, 202

- The part of MC curve above AVC is firm's short-run supply curve – (relationship between P and q)



4 things should be able to do now

01

Characterize a perfectly competitive market structure

02

Know and apply the PROFIT MAXIMIZING RULE

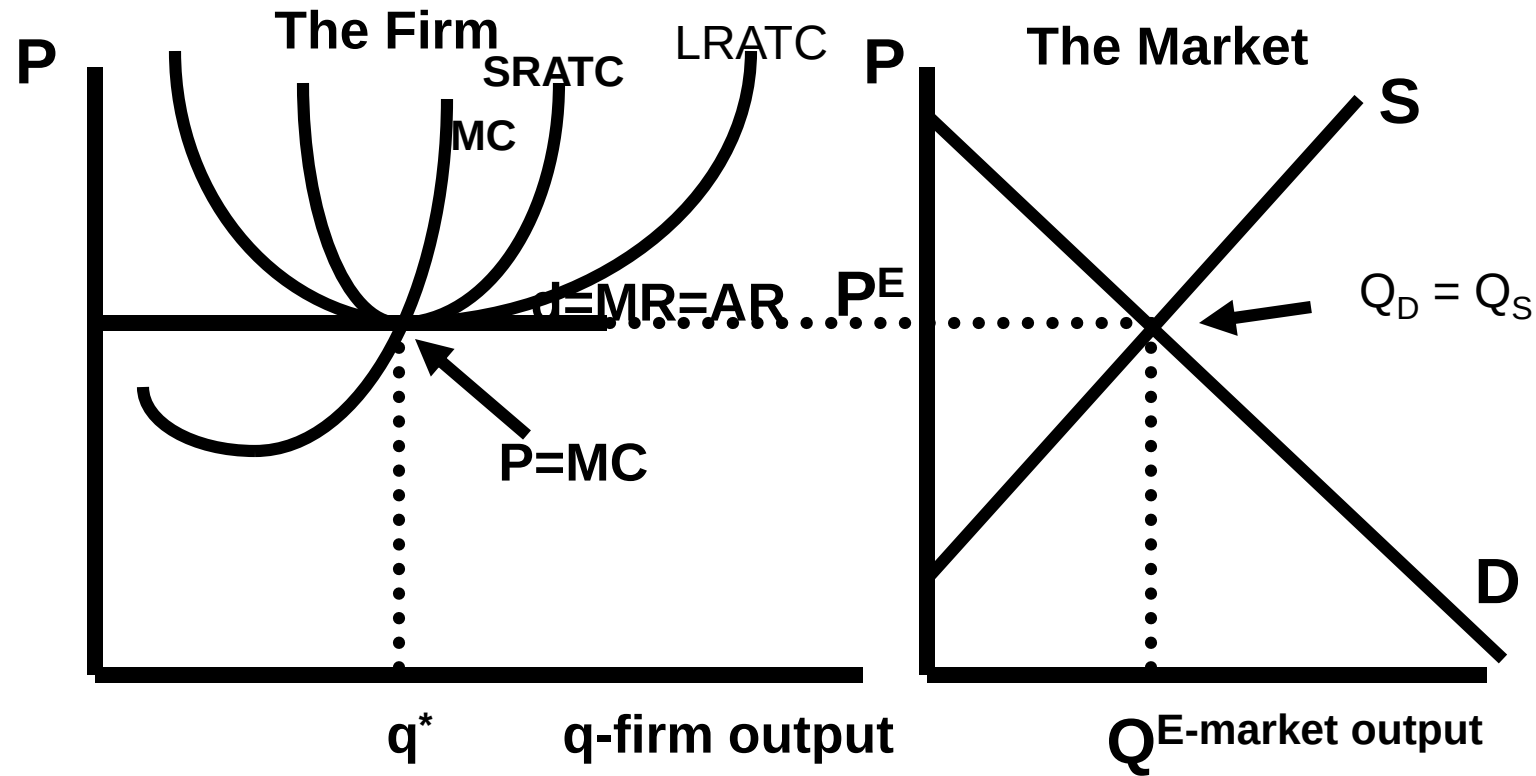
03

Determine from a graph if a firm is making a profit, breaking even, or suffering a loss

04

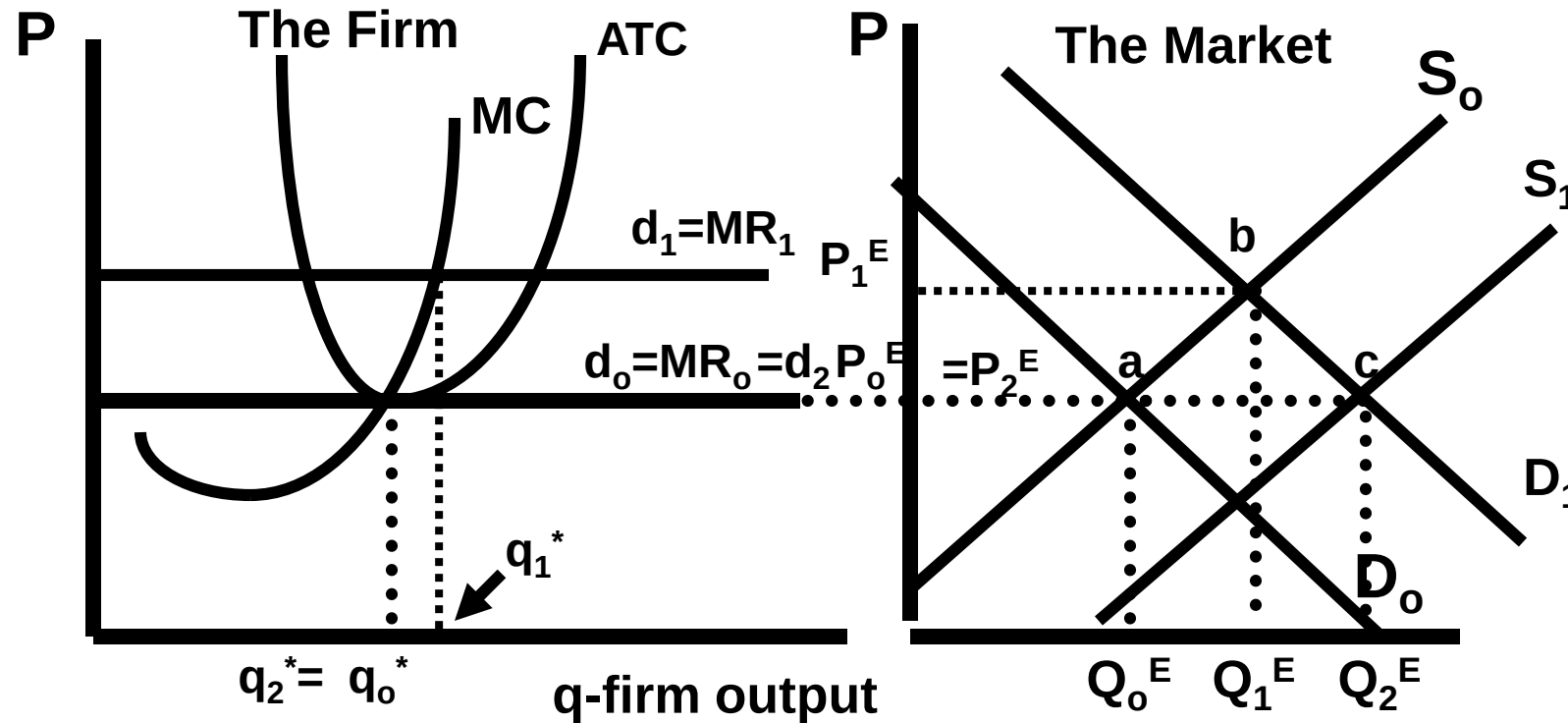
Apply the SHUT DOWN RULE

VII. Long Run Equilibrium, p. 203



- 1) The Market is in Equilibrium, $Q_D = Q_S$ in the market, no ΔP
- 2) Firms are Breaking Even, $P = ATC$, No Profits=no new firms enter, No losses = no existing firms exit, no $\Delta \#$ firms
- 3) Efficiency:
 - i) $P = \text{Minimum SRATC and LRATC}$, No Δ size of firms, optimal size, productive efficiency
 - ii) Allocative Efficiency ($P=MC$) no Δ in resource allocation

VIII. Permanent Increase in Market Demand, p. 204



Short Run Response:

due to $D \uparrow$, P^E rises and d rises, firm output rises to q_1 and firms make profit

Long Run Response: profit leads to new firm entry S_0 rises to S_1

P falls to P_2 , d falls to d_2 , q falls to q_2

a-long run equilibrium, b –short run equilibrium, c-long run equilibrium

MARKET EXPANSION

Permanent Decrease in Market Demand, p. 205

- LEADS TO MARKET CONTRACTION