eLearneconomics: Perfect Competition – MR = MC (1)

Student response

(a) Complete the following statements, using marginal analysis (i.e., the relationship between MR and MC).

    (i) Firms maximise profit where _____

    (ii) Firms minimise loss where_____

    (iii) Firms make a greater loss or smaller profit if they do not produce at where _____

    (iv) A firm will decrease or increase output to where _____

(b) Complete the table.

Situation	Type of firm ⎱ Perfect ⎰ Imperfect	Relationship between MC and MR
(i) To maximise its profit the firm must decrease its output and raise prices		
(ii) To maximise its profit the firm must decrease its output and price remains the same		
(iii)	Imperfect	MR < MC
(iv) To maximise its profit the firm has to lower its price and increase its output		
(v) To maximise its profit the firm has to leave output unchanged		
(vi) To maximise its profit the firm has to keep its price the same but increase its output		

(c) Complete the table for imperfect competition that desires to achieve equilibrium output.

Change in price	Change in output	Relationship between MC and MR
(i)		MC = MR
(ii)		MC > MR
(iii)		MR > MC

(d) Complete the table for a perfectly competitive firm that desires to achieve equilibrium output.

Change in price	Change in output	Relationship between MC and MR
(i)	increase	
(ii)	decrease	
(iii) do nothing	do nothing	

Solution

(a) Complete the following statements, using marginal analysis (i.e., the relationship between MR and MC).

    (i)   Firms maximise profit where <u>MR = MC</u>

    (ii)   Firms minimise loss where <u>MR = MC</u>

    (iii) Firms make a greater loss or smaller profit if they do not produce at where <u>MR = MC</u>

    (iv) A firm will decrease or increase output to where <u>MR = MC</u>

(b) Complete the table.

Situation	Type of firm: Perfect / Imperfect	Relationship between MC and MR
(i) To maximise its profit the firm must decrease its output and raise prices	Imperfect	MC > MR (MR < MC)
(ii) To maximise its profit the firm must decrease its output and price remains the same	Perfect	MC > MR (MR < MC)
(iii) To maximise profit the firm must decrease output and increase price	Imperfect	MR < MC
(iv) To maximise its profit the firm has to lower its price and increase its output	Imperfect	MC < MR (MR > MC)
(v) To maximise its profit the firm has to leave output unchanged	Both	MR = MC
(vi) To maximise its profit the firm has to keep its price the same but increase its output	Perfect	MC <MR (MR > MC)

(c) Complete the table for imperfect competition that desires to achieve equilibrium output.

Change in price	Change in output	Relationship between MC and MR
(i) Do nothing	Do nothing	MC = MR
(ii) Increase	Decrease	MC > MR
(iii) Decrease	Increase	MR > MC

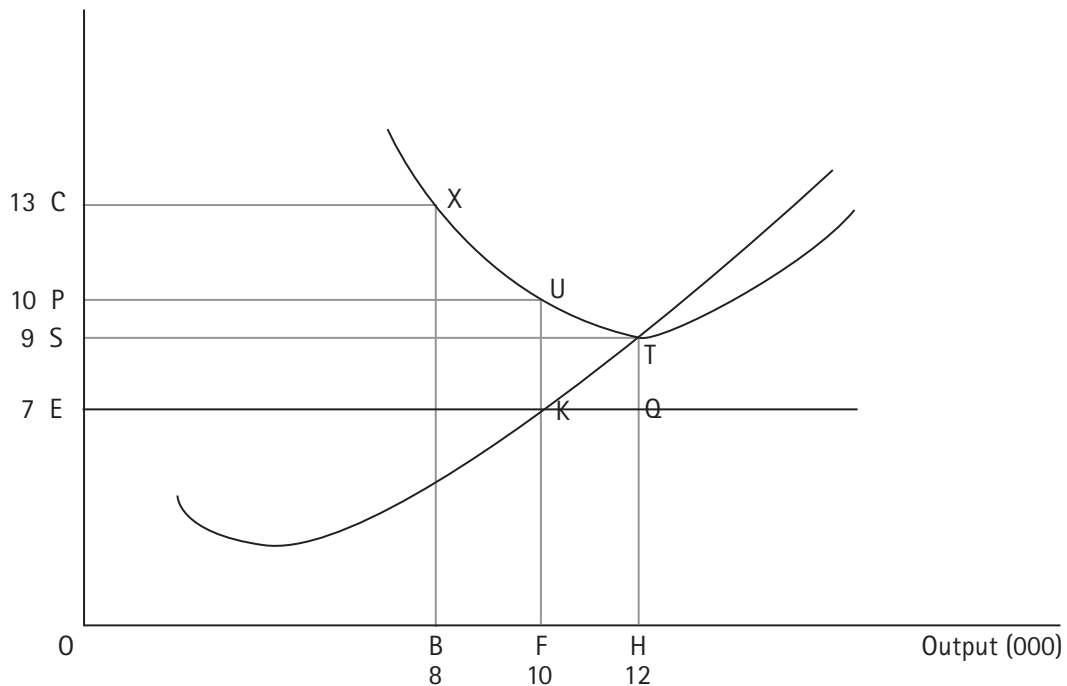**(d)** Complete the table for a perfectly competitive firm that desires to achieve equilibrium output.

Change in price	Change in output	Relationship between MC and MR
(i) remains unchanged	increase	MR > MC (MC < MR)
(ii) remains unchanged	decrease	MR < MC (MC > MR)
(iii) do nothing	do nothing	MC = MR

Use the graph to answer the questions below.

(a) Label the curves and axes in the graph.

(b) Give letters and values to identify at the equilibrium:

(i) Output _____

(ii) Price _____

(iii) TC _____

(iv) Quantity _____

(v) TR _____

(vi) Loss _____

(vii) AC _____

(viii) AR _____

(c) What made you choose the equilibrium output above?
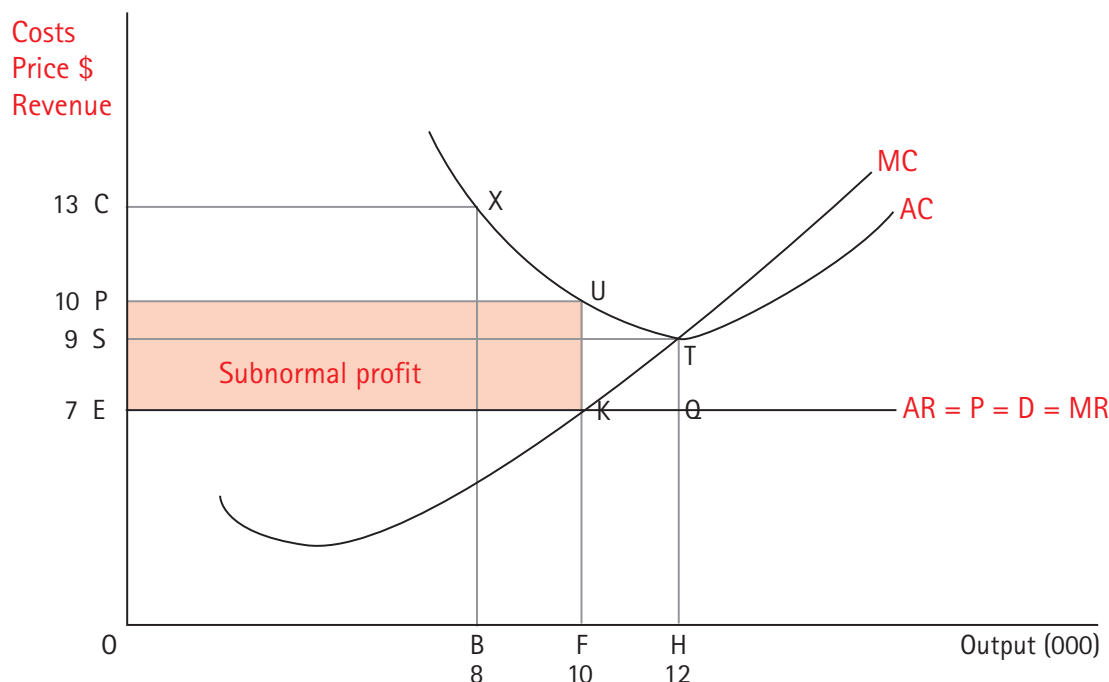
_____

(d) In the graph, shade in the economic profit made.

(e) Define this type of profit.

_____

_____

_____

Solution

Use the graph to answer the questions below.

(a) Label the curves and axes in the graph.

(b) Give letters and values to identify at the equilibrium:

(i) Output <u>OF 10 000</u>

(ii) Price <u>OE $7</u>

(iii) TC <u>PUFO $100 000</u>

(iv) Quantity <u>OF   10 000</u>

(v) TR <u>FKEO $70 000</u>

(vi) Loss <u>PUKE $30 000</u>

(vii) AC <u>OP $10</u>

(viii) AR <u>OE $7</u>

(c) What made you choose the equilibrium output above?

<u>It's where MR = MC; any other position would be a greater loss.</u>

(d) In the graph, shade in the economic profit made.
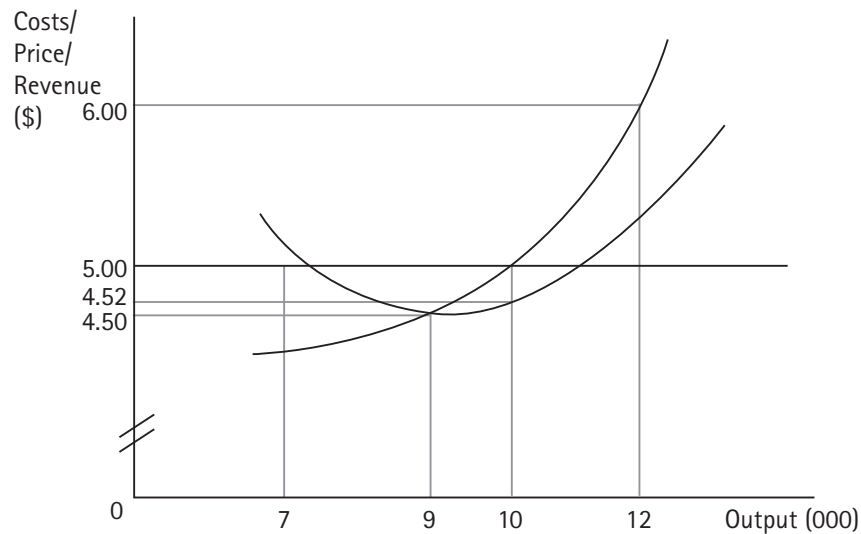
(e) Define this type of profit.

<u>A return insufficient to keep entrepreneurs in their present activity.</u>

Use the diagram to answer the questions that follow.

(a) Label all the curves and shade in the profit made.

(b) At the maximum profit (equilibrium output) position, what is the:

Price? _____   Total revenue? _____

Output? _____   Total cost? _____

Average revenue? _____

(c) By considering outputs 9 000, 10 000 and 12 000 units, explain using marginal analysis the determination of the maximum profit output level.

_____

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(d) What type of profit is made in the diagram?
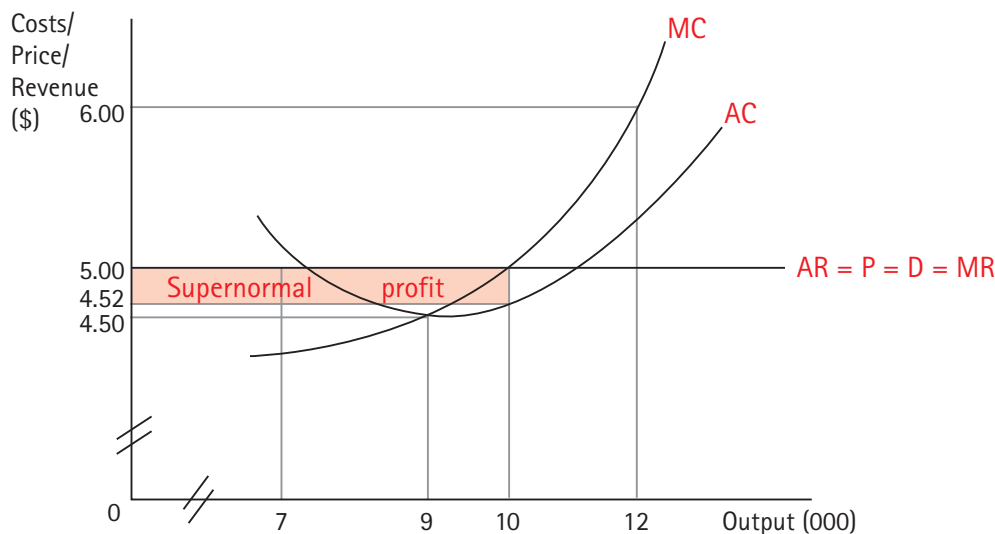
_____

_____

_____

(e) Define this type of profit.

_____

_____

_____

eLearneconomics: Perfect Competition – MR = MC (3a)

Solution

Use the diagram to answer the questions that follow.

(a) Label all the curves and shade in the profit made.

(b) At the maximum profit (equilibrium output) position, what is the:

Price?	$5.00	Total revenue?	$50 000 (AR x Q = $5 x 10 000)
Output?	10 000	Total cost?	$45 200 (AC x Q = $4.52 x 10 000)
Average revenue?	$5.00		

(c) By considering outputs 9 000, 10 000 and 12 000 units, explain using marginal analysis the determination of the maximum profit output level.

• At 9 000 MR > MC (or MC < MR) and it is profitable to produce more.

• At 10 000 MR = MC. This is maximum profit.

• At 12 000 MR < MC (or MC > MR) and it is more profitable to produce less.

(d) What type of profit is made in the diagram?

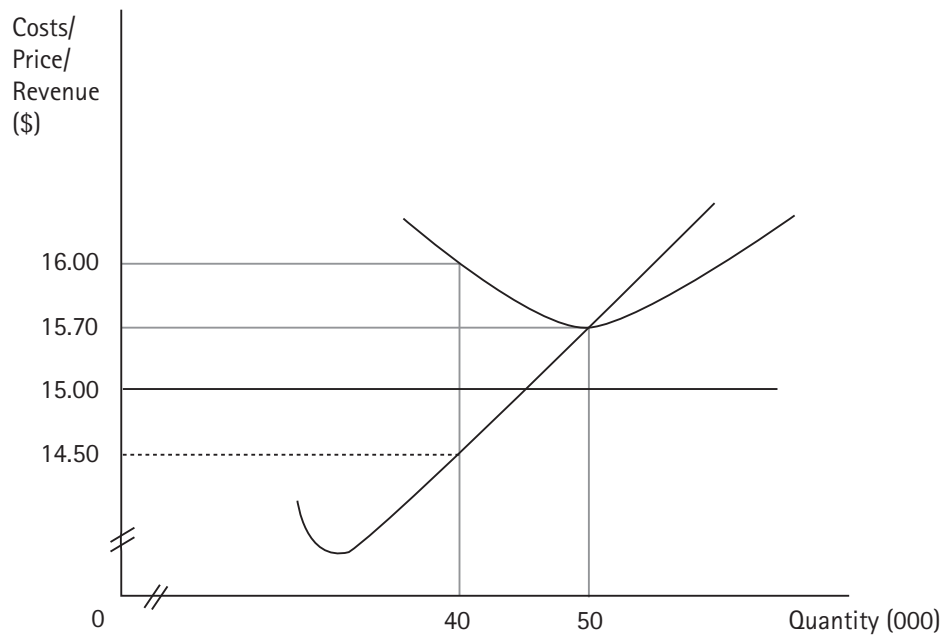Supernormal profit.

(e) Define this type of profit.

A return to the entrepreneur in excess (more than sufficient) of that required to hold them in their present activity.

Student response

Use the diagram to answer the questions that follow.

(a) Label the curves.

(b) (i) Identify the loss-minimising level of output as Q and price charged as P.

_____

(ii) What made you choose this position? _____

_____

(c) Shade in the loss made.

(d) At 50 000 units:

identify average revenue _____

identify marginal revenue _____

calculate total revenue _____

calculate total cost _____

calculate loss made _____

(e) At 40 000 units:

identify average revenue _____

identify marginal revenue _____

calculate total revenue _____

calculate total cost _____

calculate loss made _____

Solutions

Use the diagram to answer the questions that follow.
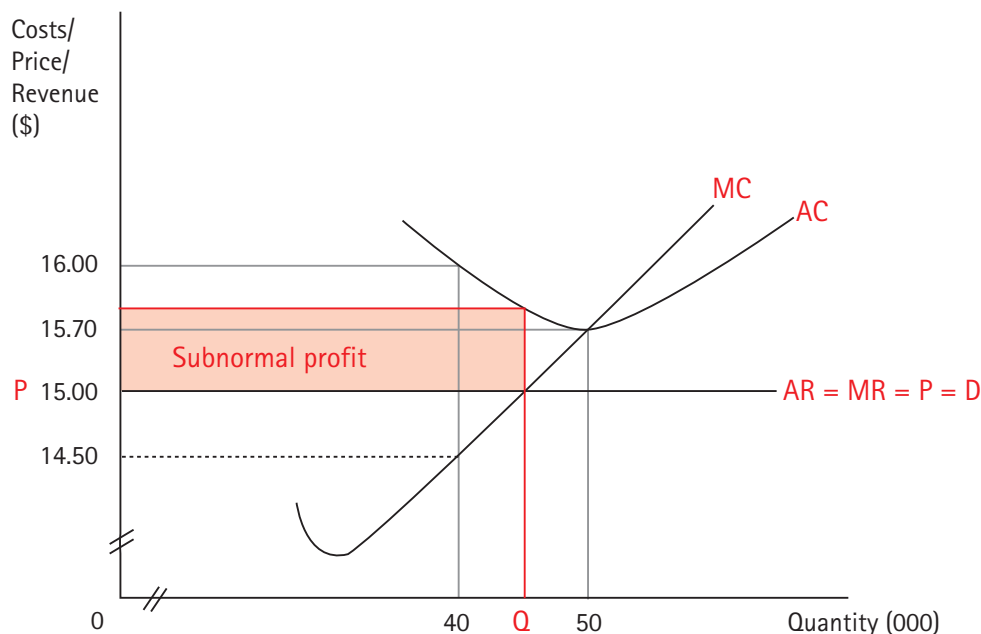
(a) Label the curves.

(b) (i) Identify the loss-minimising level of output as Q and price charged as P.

(between 40 000 and 50 000) shown

(ii) What made you choose this position? MR = MC; any other position is a greater loss.

(c) Shade in the loss made.

(d) At 50 000 units:

identify average revenue $15.00

identify marginal revenue $15.00

calculate total revenue   50 000 x $15 = $750 000

calculate total cost   50 000 x $15.70 = $785 000

calculate loss made $35 000

(e) At 40 000 units:

identify average revenue $15.00

identify marginal revenue $15.00

calculate total revenue   40 000 x $15 = $600 000

calculate total cost   40 000 x $16 = $640 000
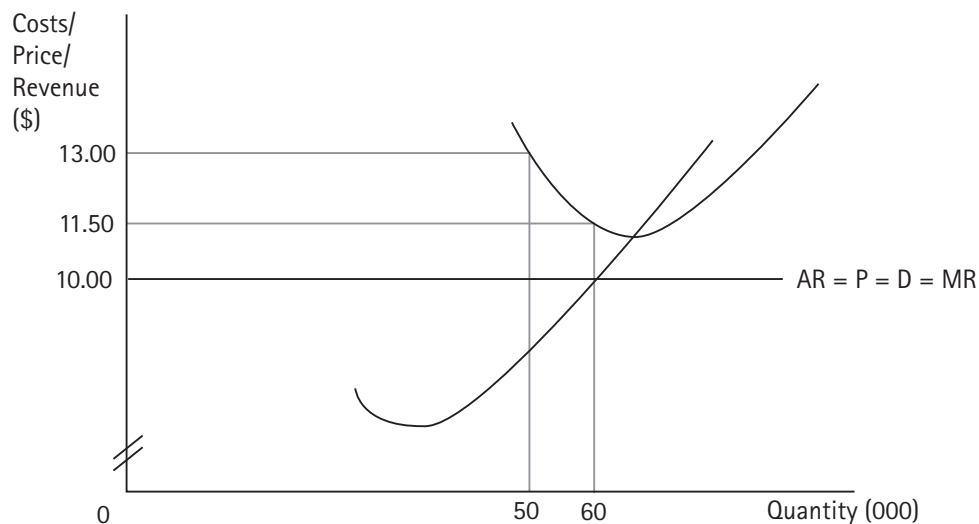
calculate loss made $40 000

Student response

Use the graph to answer the questions that follow.

(a) Define 'subnormal profits'.

_____

_____

_____

(b) Label the curves on the diagram above.

(c) (i) Identify loss minimising level of output as QM.

_____

    (ii) At the loss minimising level of output what is AR? _____

                                           TR? _____

                                           TC? _____

                                          loss? _____

(d) Shade in the loss made.

(e) (i) Why would the firm not produce at 50 000 units?

_____

    (ii) At 50 000 units what is AR? _____

                                TR? _____

                                TC? _____

                              loss? _____
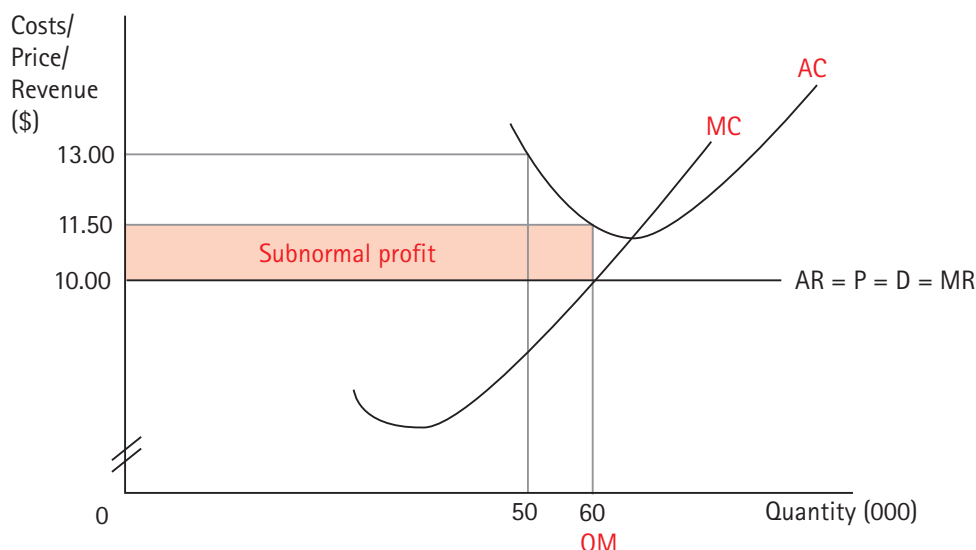
Solutions

Use the graph to answer the questions that follow.

(a) Define 'subnormal profits'.

A return to entrepreneurs which is less than normal and which is insufficient to keep them in their present activity.

(b) Label the curves on the diagram above.

(c) (i) Identify loss minimising level of output as QM.

Shown on diagram at 60 000.

    (ii) At the loss minimising level of output what is AR? $10

                           TR? $10 x 60 000 = $600 000

                           TC? $11.50 x 60 000 = $690 000

                           loss? = $90 000

(d) Shade in the loss made.

(e) (i) Why would the firm not produce at 50 000 units?

Makes a greater loss (MR > MC). It could make a smaller loss by producing more.

    (ii) At 50 000 units what is AR? $10

                     TR? $10 x 50 000 = $500 000

                     TC? $13 x 50 000 = $650 000

                     loss? $150 000