Exercise walk-through

4.1

Firms, costs, growth and competition / IGCSE production and labour

Pearson Edexcel · International GCSE · Economics

Production (2)

- **enterprise** : the skill of an entrepreneur who brings the other factors together and takes the risk of starting a business.
- the **primary sector** takes natural resources from the earth: farming, fishing, forestry and mining;
- the **secondary sector** turns materials into goods: manufacturing and construction;
- the **tertiary sector** provides services: shops, banks, transport, health care, education, tourism.

Productivity and division of labour

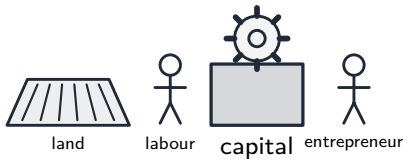
- Rise in productivity $= \frac{10-8}{8} \times 100 = 25\%$.
- If the bakery runs 40 worker-hours a day, daily output rises from $8 \times 40 = 320$ to $10 \times 40 = 400$ loaves, with no extra workers.
- **Land**: fertiliser, drainage, irrigation and **land** reclamation. The hybrid rice developed by Yuan Longping from the 1970s raised rice yields per hectare by about 20%.

Common errors

- Calling money "**capital**" as a factor of production. Capital means man-made goods used in production, such as machines.
- Confusing production (total output) with productivity (output per worker or per hour).
- Listing **fixed costs** that change with output. Fixed costs stay the same whatever the output.

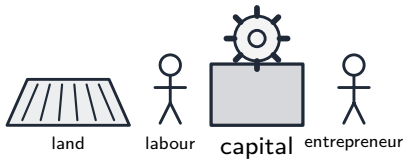
Exercise 2.1

2.1 Name the four factors of production. [2]



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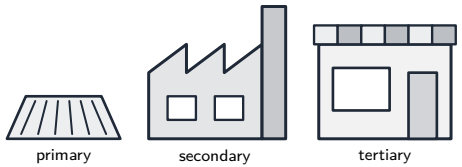
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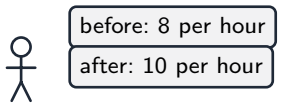
2.1 Land; labour; capital; enterprise.

Setup for exercise 2.2

2.2 Name the three sectors and state which grows most in developed economies. [2]



2.3 Output per worker-hour rises from 8 to 10. Calculate the percentage productivity gain. [2]

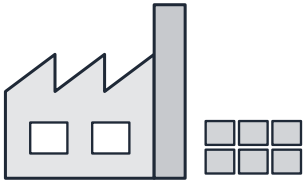


2.4 State the formula and one advantage and one disadvantage of the division of labour. [3]



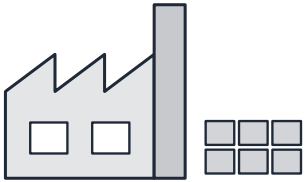
Exercise 2.2

2.5 Name any four of the six internal economies of scale. [2]



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2.2 Primary; secondary; tertiary (1). The tertiary (services) sector grows most as economies develop (1).

2.3 $\frac{10-8}{8} \times 100 = 25\%$.

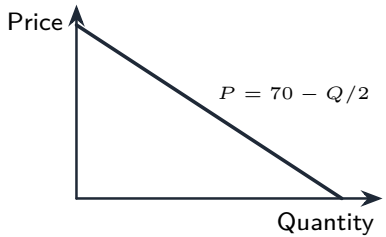
2.4 The division of labour is the specialisation of workers in one task each within production. Advantage: workers become quick and skilled at one task, raising productivity. Disadvantage: work becomes monotonous, lowering morale and raising turnover.

2.5 Any four of: purchasing (bulk buying); marketing; technical; financial; managerial; risk bearing.

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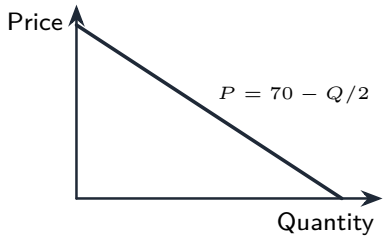
Exercise 3.1

3.1 *(Original.)* On AR $P = 70 - Q/2$ with price 50: calculate TR and AR at $Q = 40$, and state where TR is maximised. [4]



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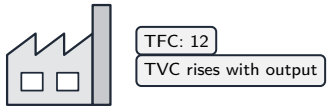
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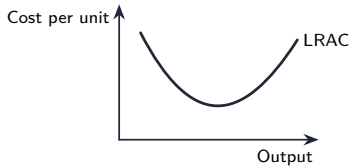
3.1 TR $= P \times Q = 50 \times 40 = 2000$; AR $= TR/Q = 2000/40 = 50$ (the price itself). TR is maximised where MR $= 0$: $70 - Q = 0$ gives $Q = 70$, price 35, TR $= 2450$.

Exercise 3.2

3.2 *(Original.)* From the table (TFC 12; TVC 5, 9, 12, 14, 17, 21, 26, 32, 39): calculate TC, AVC and ATC at $Q = 7$, and state the quantity at which ATC is minimised. [4]

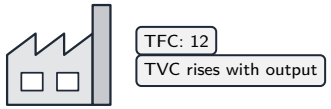


3.3 *(Original.)* A firm doubles its output and its total costs rise from 38 to 68 currency units (per-day scale from the table doubled). Using the LRAC diagram, explain whether the firm is experiencing economies or diseconomies of scale. [3]

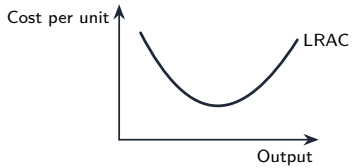


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3.2 At $Q = 7$: TVC $= 26$, so TC $= 26 + 12 = 38$; AVC $= 26/7 \approx 3.71$; ATC $= 38/7 \approx 5.43$. ATC is minimised at $Q = 7$ – exactly this output (values either side: 5.5 and 5.67).

3.3 Costs per unit BEFORE: $38/7 \approx 5.43$; AFTER: doubling output to $Q = 14$ with TC

Full solution on next slide

Full solution 3.2

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3.3 Costs per unit BEFORE: $38/7 \approx 5.43$; AFTER: doubling output to $Q = 14$ with TC 68 gives ATC $= 68/14 \approx 4.86$. Average cost has FALLEN as output grew, so the firm is on the falling LRAC – economies of scale (bulk buying, technical or managerial savings spreading over more units).

Local review guidance: percentage change with the ORIGINAL value as denominator; table answers show the division; (R1) the LRAC verdict compares ATC before and after – "costs rose" alone is not an answer, only COST PER UNIT decides. This is authored classroom guidance.