A-LEVEL BUSINESS • EXERCISE SHEET

4.1 The nature of operations

Name: _____ Class: _____ Date: _____ **Total: 29 marks**

KEY WORDS operations 运营 • productivity 生产率 • flow production 流水线生产 • transformation process 转化过程 • inputs 投入

Objective

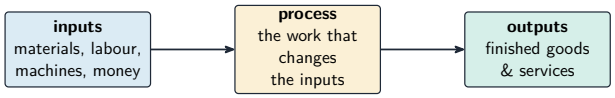
Build the skills to answer exam questions on **the nature of operations** 运营的本质 — the **transformation process** 转化过程, **productivity** 生产率, **capital- and labour-intensive** 资本密集型和劳动密集型 operations, and the **methods of production** 生产方法.

You must be able to:

- describe the transformation process and how operations add value
- calculate **productivity** and explain efficiency
- analyse and evaluate the choice of production method

1 Worked examples

Inputs, outputs and productivity

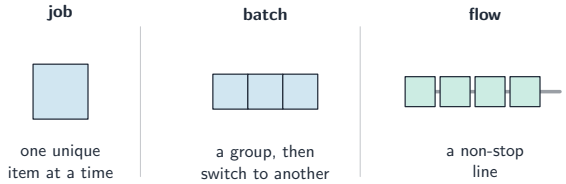


the output is worth more than the inputs ⇒ value added

Inputs → process → outputs: value is added in the process

$$\text{productivity} = \frac{\text{output}}{\text{input used}}$$

- **Worked:** 600 units made by 20 workers → $\frac{600}{20} = 30$ units per worker.
- **Methods:** *job* (one unique item), *batch* (a group then a switch), *flow* (non-stop line, low unit cost, needs high steady demand).



The three methods of production: job, batch and flow

- **Capital-intensive** = mostly machines (high set-up, low unit cost); **labour-intensive** = mostly people (flexible, personal).

Answer shapes: AO1 + AO2 + AO3 (reasoning chain) + AO4 (a supported judgement *in context*).

2 Practice

2.1 Define the term *productivity*. [2]

2.2 A team of 5 workers makes 200 units in a shift. Calculate the productivity per worker. [2]

2.3 State the difference between *job* and *flow* production. [2]

3 Exam-style questions

3.1 Explain one benefit to a business of raising its productivity. [3]

3.2 Analyse two benefits to a manufacturer of using **flow production**. [8]

3.3 A furniture maker is choosing between **job** and **batch** production. Evaluate which method it should use. [12]

Solutions

Business answers are marked by **level of response** against the assessment objectives: award **AO1** knowledge, **AO2** application, **AO3** analysis and **AO4** evaluation.

2.1 the amount of output produced from a given amount of input (output per unit of input) (2 for a clear definition; 1 for a partial idea).

2.2 $\frac{200}{5} = 40$ units per worker (2; award 1 for a correct method with the wrong figure).

2.3 job production makes one unique item at a time; flow production makes identical items non-stop on a line (2 for a clear difference; 1 for a partial idea).

3.1 *[3]* **AO1** 1 — name a benefit (lower cost per unit; more output; can compete on price). **AO2** up to 2 — develop it, e.g. higher productivity spreads fixed costs over more units → lower unit cost → the firm can cut price or raise its margin (2 developed / 1 limited).

3.2 *[8]* For **each** of two benefits: **AO1** 1 + **AO2** 1 + **AO3** up to 2. Example chains — *low unit cost*: machines run non-stop → many identical units → economies of scale → low cost per unit. *Consistent quality*: a standard line → every unit is the same → fewer defects and complaints. Maximum 4 per benefit, 8 total.

3.3 *[12]* **AO1** 2 / **AO2** 2 / **AO3** 2 / **AO4** up to 6. **Job:** unique, high-quality, custom furniture → higher price, but slow and costly per unit. **Batch:** groups of the same design → lower unit cost and some variety, but switching causes downtime and stock. Judgement: a maker of custom pieces should use job production; one selling several standard ranges should use batch — it depends on how varied the products are and the level of demand.