1.16 Production Planning and Costs: 10-minute Pack

AQA 8552 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions.

1 A designer needs 6 individually adjusted display stands for a local exhibition. Each stand has a different height. Existing adjustable hand tools can make all six. A proposed batch line needs dedicated tooling and a new setup for each height. No repeat orders are expected. Explain why one-off production is suitable and why the proposed batch production may be less suitable.

(Total for Question 1 is 4 marks)

2 An order is for 240 identical panels, due within 2 days. Method A makes batches of 40; setup is 25 minutes once per batch and each panel takes 2 minutes. Method B uses one setup of 100 minutes for the order and each panel takes 1.5 minutes. One line is available, no parallel production, and 9 hours are available. Decide which method meets the time limit.

(Total for Question 2 is 4 marks)

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Mark scheme · 1.16 Production Planning and Costs: 10-minute Pack

Question 1

one-off production can adapt each stand to its required individual height	**B1**
using existing hand tools avoids investment in the dedicated tooling required by the batch line	**B1**
the different heights require repeated batch-line setups, reducing the time benefit of repeating one setup	**B1**
with only six stands and no repeat orders, batch-line setup investment cannot be spread over a long run to reduce its cost per stand	**B1**

Answer: One-off production can adapt each stand to its individual height using the existing hand tools, avoiding dedicated tooling investment. The proposed batch line would need a fresh setup for each height. With only six stands and no repeat orders, its setup investment cannot be spread over a long run to reduce cost per stand.

Question 2

A has 240 / 40 = 6 batches	**B1**
A time = 6 x 25 + 240 x 2 = 630 minutes, so it misses 540	**B1**
B time = 100 + 240 x 1.5 = 460 minutes	**B1**
choose B as it meets 540 minutes; batch setup counted six times for A and once for B	**B1**

Answer: A takes 630 minutes and misses the 540-minute limit. B takes 460 minutes and meets it, so choose B.

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