

Grade 7 EMS Worksheet

Assessment Task: Measuring productivity

Measuring productivity (Individual activity)

Read the case study below and answer the questions that follow.

Thembi's mom cannot afford to give her any pocket money. Thembi told her mom not to worry for she's got a good business idea that will earn her some pocket money. Thembi's idea is to use discarded greeting cards, felt, glitter and other decorations to decorate notebook covers. She gets down to work and sells her decorated notebooks at the local flea market. It takes her half an hour to make a notebook cover and it costs her R10 for the notebook and decorations. She sells the notebooks for R20 at the flea market.

- a) Mr Jackson wants to buy 20 decorated notebooks from Thembi to give as gifts to his learners. How long will it take Thembi to produce 20 decorated notebooks? [1 mark]
- b) How much will it cost her to produce the 10 decorated notebooks? [1 mark]
- c) Productivity refers to the relationship between the inputs in the production process and the number of outputs that are produced. This can be measured by the formula:
- $$\text{Productivity} = \frac{\text{Quantity of outputs}}{\text{Quantity of inputs}}$$
- How can the number of outputs in a production process be increased when the inputs remain the same? [1 mark]
- d) Another way of increasing output is by increasing input. How can Thembi increase her input? [1 mark]
- e) When you are able to produce more units by working faster, it decreases the cost of a single unit. If Thembi employs her brother Tshepo to help her cut designs from old greeting cards, Thembi will have more time to decorate the notebook covers. She pays Tshepo R1 per design that he cuts out and she pastes one on each notebook. This increases her input costs on the covers to R11 each. However, she now finds that it takes her only 15 minutes to decorate a book cover. How many covers can she decorate in an hour? [1mark]

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f) How long will it take her to complete Mr Jackson's order? [1mark]

g) Why can we say that Thembi decreases her inputs when it costs her R1 more to produce the units? [1 mark]

[Total: 7 marks]

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Suggested Solutions

Question number	Possible marks	Solution
1	7	<p>a) It will take Thembi 10 hours to produce 20 decorated notebooks. [1 mark]</p> <p>b) It will cost her $20 \times R10 = R200$. [1 mark]</p> <p>c) If you want to increase the number of outputs, but your inputs stay the same, you have to increase your productivity. [1 mark]</p> <p>d) Thembi can increase her output by working faster. [1 mark]</p> <p>e) She can now decorate four notebook covers in an hour. [1 mark]</p> <p>f) It will take her five hours to complete Mr Jackson's order. [1 mark]</p> <p>g) Thembi decreases her inputs in terms of time. She can work faster so she can produce more goods that she can sell at the flea market. [1 mark]</p>