

Proposed productivity problem (SPAUIT)

Maximilian is president of the Marshmallows Manufacturing. The company produces 500.000 marshmallows per day and has 30 workers. Every worker should work 8 hours per day making a total of 240 hours every day. One hour is paid with 8€.

The raw materials (sugar, gelatine, corn syrup...) cost 250€ per ton, needing 2 tons every day.

The energy costs are 5000€/day and the capital is 8000€/day.

(a) What is the labour productivity?

$$\text{Labor productivity} = \text{Produced quantity} / \text{Labor}$$

$$\text{Labor productivity} = 500\,000 / 240 = 2083.33 \text{ units/hour}$$

(b) What is the multifactor productivity?

$$\text{Multifactor productivity} = \text{Produced quantity} / (\text{Labor} + \text{Energy} + \text{Material} + \text{Capital})$$

$$\text{Multifactor productivity} = 500\,000 / (240 * 8 + 2 * 250 + 5000 + 8000) = 32.425$$