

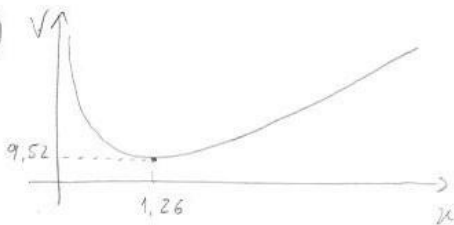
① a)



$$\left. \begin{aligned} V &= 2 \\ x \cdot y \cdot z &= 2 \\ y &= \frac{2}{x^2} \end{aligned} \right\}$$

$$\begin{aligned} A &= x^2 + x^2 + 4xy = \\ &= 2x^2 + 4x \left(\frac{2}{x^2} \right) = \\ &= 2x^2 + \frac{8}{x} = \frac{2x^3 + 8}{x} \text{ cgd.} \end{aligned}$$

1.5

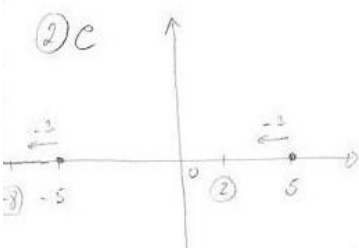


se $x \approx 1.26$,

$$\text{então } y = \frac{2}{(1.26)^2} \approx 1.26$$

Conclusão: A embalagem
dita-se de uma caixa
de lado 1,26 dm.

② c

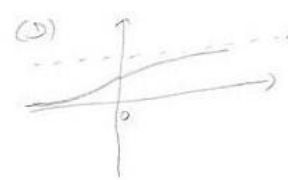
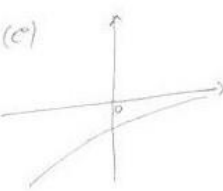
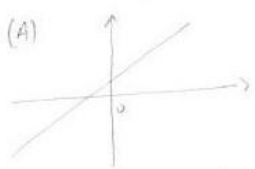


③ B



$$A = 2 \cdot 5 = 10$$

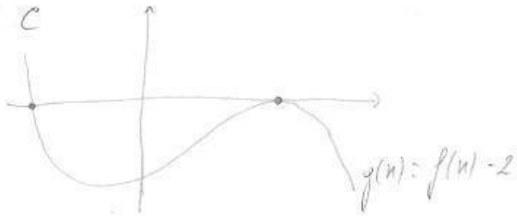
④ B



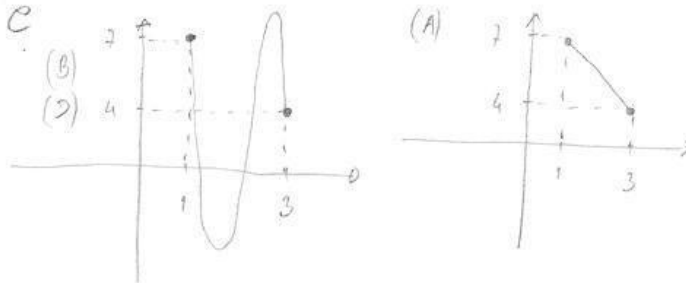
- ⑤ e $g(x) = -2$ tem 2 sol.
- $g(x) = 3$ tem 2 sol.
- $g(x) = -10$ tem 1 sol.
- $g(x) = 20$ tem 1 sol.
- $g(x) = 2$ tem 3 sol.

$$\left. \begin{aligned} g(x) &= 5 \text{ tem 3 sol. para} \\ &5 \in]-2, 3[\end{aligned} \right\}$$

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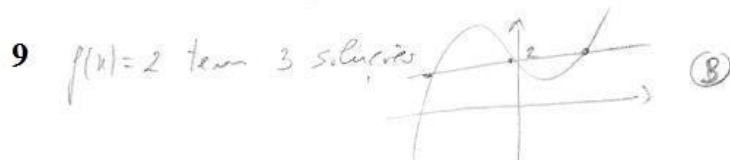


7

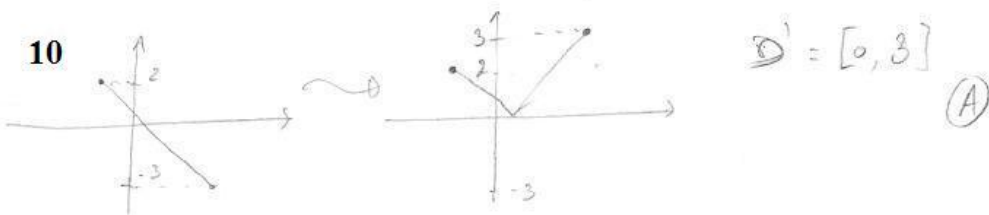


8 $\ln(x) = 0 \Rightarrow y(x) \cdot (x+3)^2 = 0 \Rightarrow y(x) = 0 \vee (x+3)^2 = 0 \Rightarrow y(x) = 0 \vee x+3 = 0 \Rightarrow$
 $\Rightarrow y(x) = 0 \vee x = -3$ (C)
 2 zeros reais

9



10



11

$$V = 2t$$

$$7 \times 5 \times h = 2t$$

$$h = \frac{2t}{35}$$

$$V_{total} = 7 \times 5 \times 4 = 140 \text{ para } h = 4$$

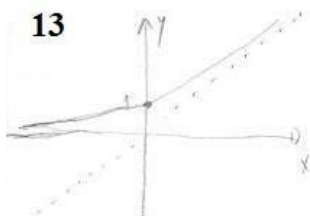
$$\text{Como } h(70) = 4 \text{ então } t \in [0; 70]$$

(B)

12

A

13

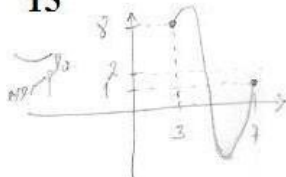


(C)

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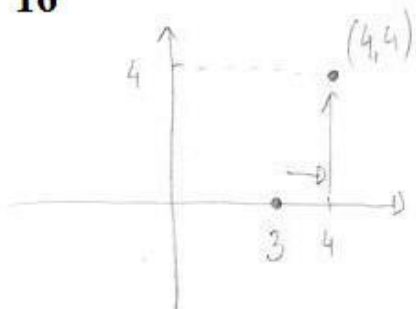
D

15



(D)

16



$$g(n) = f(n-1) + 4$$

$$\begin{matrix} \xrightarrow{1} & \uparrow 4 \end{matrix}$$

(B)