

Dado $\rightarrow \beta = 2$

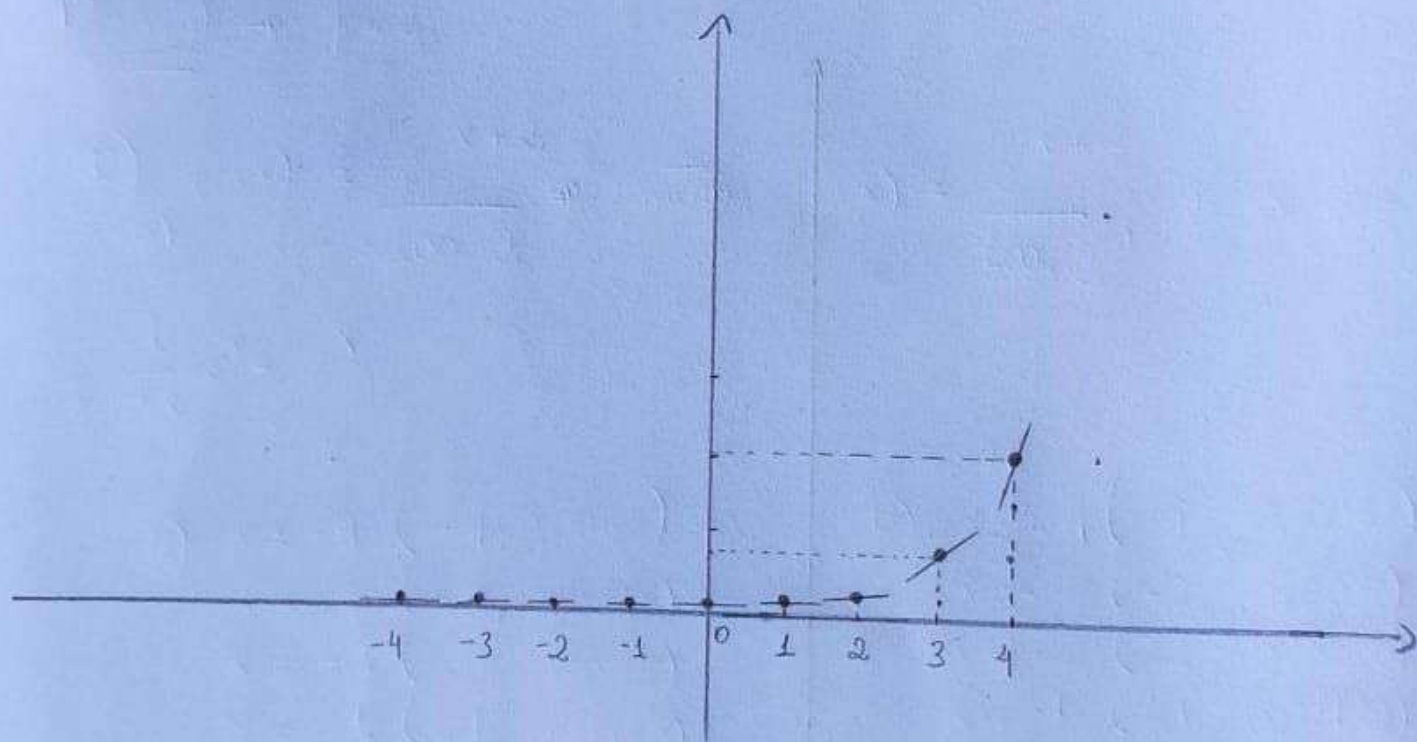
I) a) $f(x) = \frac{e^{x+2}}{100 \cdot 2} \Rightarrow$ então, $f'(x) = \frac{e^{x+2}}{100 \cdot 2}$, visto que

$\frac{d}{dx} e^x = e^x$ \nearrow



- b)
- $x = -4$ (-4; 0,0068)
 - $x = -3$ (-3; 0,0018)
 - $x = -2$ (-2; 0,005)
 - $x = -1$ (-1; 0,0139)
 - $x = 0$ (0; 0,0369)
 - $x = 1$ (1; 0,1004)
 - $x = 2$ (2; 0,2730)
 - $x = 3$ (3; 0,7420)
 - $x = 4$ (4; 2,0171)

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$$11) f(x) = \sqrt{x^2 + 2} \quad \Rightarrow \quad f(u) = u^{\frac{1}{2}} \rightarrow \text{EXTERNA}$$

$$u(x) = (x^2 + 2) \rightarrow \text{INTERNA}$$

$$\frac{d[f(u)]}{du} \cdot \frac{d[u(x)]}{dx} \Rightarrow \frac{1}{2} \cdot u^{-\frac{1}{2}} \cdot 2x \Rightarrow$$

$$u^{-\frac{1}{2}} \cdot x \Rightarrow x(x^2 + 2)^{-\frac{1}{2}} = \frac{x}{\sqrt{x^2 + 2}} = f'(x)$$

b) $f(x)$

$$x = -4 \quad (-4, 4, 24)$$

$$x = -3 \quad (-3, 3, 31)$$

$$x = -2 \quad (-2, 2, 45)$$

$$x = -1 \quad (-1, 1, 73)$$

$$x = 0 \quad (0, 1, 41)$$

$$x = 1 \quad (1, 1, 73)$$

$$x = 2 \quad (2, 2, 45)$$

$$x = 3 \quad (3, 3, 31)$$

$$x = 4 \quad (4, 4, 24)$$

$$f'(x)$$

$$x = -4 \quad (-4, -0, 94)$$

$$x = -3 \quad (-3, -0, 90)$$

$$x = -2 \quad (-2, -0, 88)$$

$$x = -1 \quad (-1, -0, 58)$$

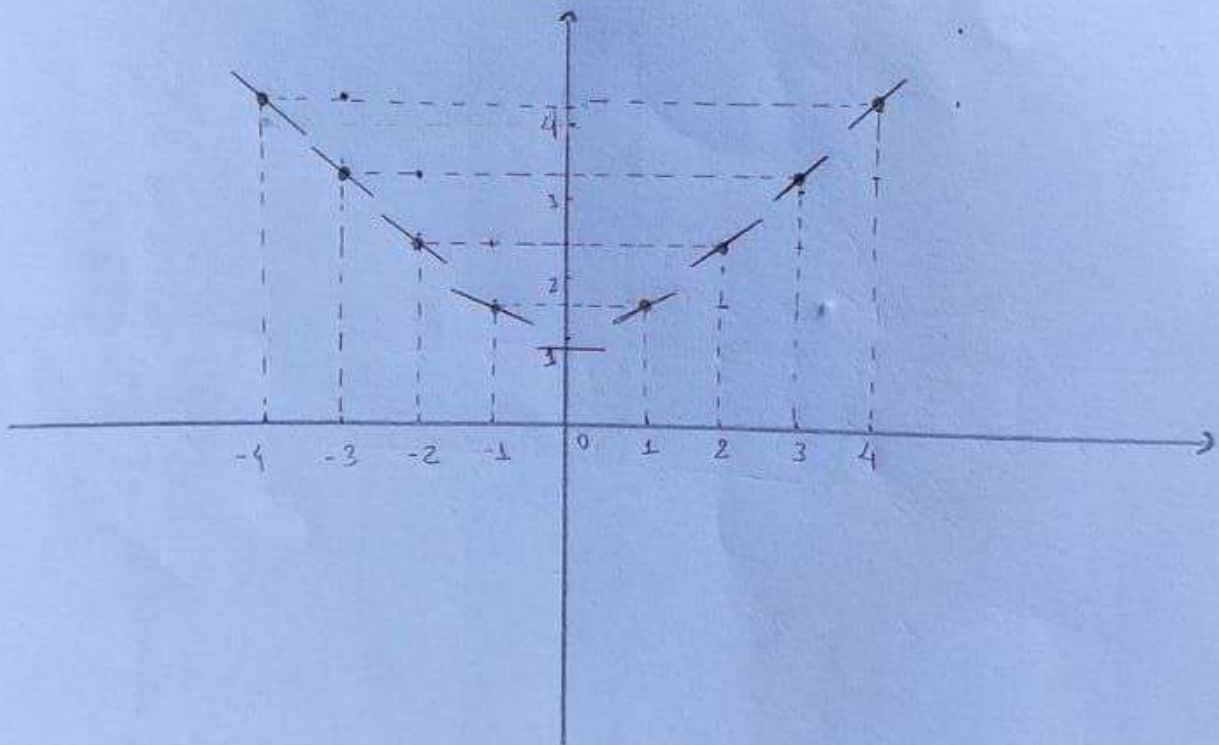
$$x = 0 \quad (0, 0)$$

$$x = 1 \quad (1, 0, 58)$$

$$x = 2 \quad (2, 0, 88)$$

$$x = 3 \quad (3, 0, 90)$$

$$x = 4 \quad (4, 0, 94)$$



$$\text{III) a) } f(x) = \frac{x^3 + 3x^2 - 4}{10} \Rightarrow f(x) = \frac{x^3}{10} + \frac{3x^2}{10} - \frac{4}{10} \Rightarrow$$

$$\frac{3x^2}{10} + \frac{6x}{10} = \boxed{\frac{3x(x+3)}{10} = f'(x)}$$

b) $f(x)$

$$x = -4 \quad (-4, -2)$$

$$x = -3 \quad (-3, -0,4)$$

$$x = -2 \quad (-2, 0)$$

$$x = -1 \quad (-1, -0,2)$$

$$x = 0 \quad (0, -0,4)$$

$$x = 1 \quad (1, 0)$$

$$x = 2 \quad (2, 1,6)$$

$$x = 3 \quad (3, 5)$$

$$x = 4 \quad (4, 10,8)$$

$f'(x)$

$$x = -4 \quad (-4, 2,4)$$

$$x = -3 \quad (-3, 0,9)$$

$$x = -2 \quad (-2, 0)$$

$$x = -1 \quad (-1, -0,3)$$

$$x = 0 \quad (0, 0)$$

$$x = 1 \quad (1, 0,9)$$

$$x = 2 \quad (2, 2,4)$$

$$x = 3 \quad (3, 4,5)$$

$$x = 4 \quad (4, 7,2)$$

