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Para cada uma das funções seguintes, encontre o máximo e o mínimo absoluto

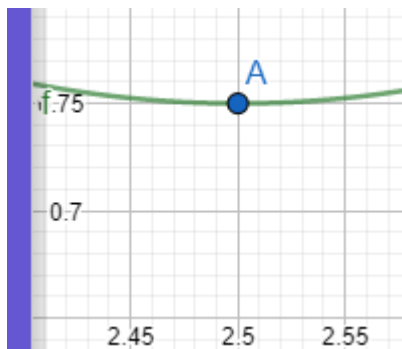
1)  $f(x) = x^2 - 5x + 7$

$$f'(x) = 2x - 5 = 0$$

$$x = 2,5$$

$$f(2,5) = 2,5^2 - 5 \cdot 2,5 + 7$$

$$\underline{f(2,5) = 0,75}$$



2)  $f(x) = x^3 - 6x^2 + 9x + 2$

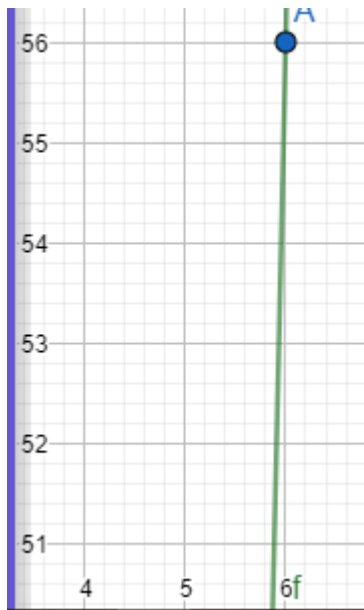
$$f'(x) = 3x^2 - 12x + 9 = 0$$

$$f''(x) = 6x - 12 = 0$$

$$x = 12/2 = 6$$

$$f(6) = 6^3 - 6 \cdot 6^2 + 9 \cdot 6 + 2$$

$$\underline{f(6) = 56}$$



$$3) f(x) = x^4 - 16^2 + 2$$

$$f'(x) = 4x^3 = 0$$

$$f''(x) = 12x^2 = 0$$

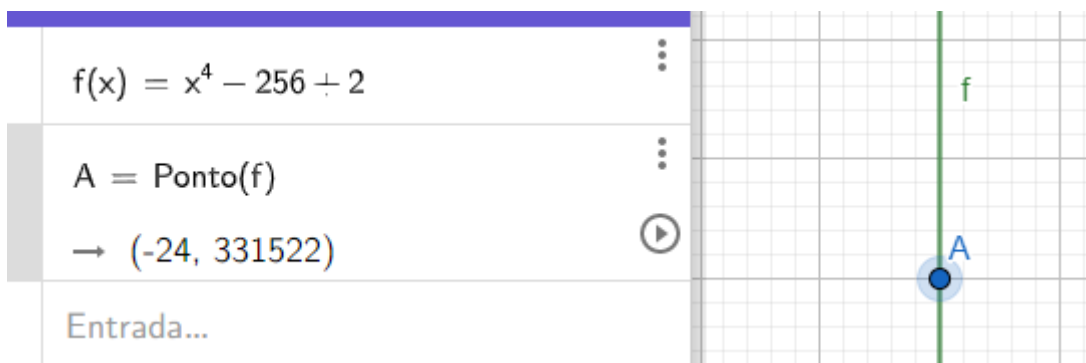
$$f'''(x) = 24x = 0$$

$$x = -24$$

$$f(-24) = -24^4 + 256 + 2$$

$$f(x) = 331.776 - 256 + 2$$

$$\underline{f(-24) = 331.522}$$



$$4) f(x) = x^2 e^x$$

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$$5) f(x) = x^4 - 6x^2 + 2$$

$$f'(x) = 4x^3 - 12x$$

$$f''(x) = 12x^2 - 12$$

$$f'''(x) = 24x = 0$$

$$x = -24$$

$$f(-24) = (-24)^4 - 6 * (-24)^2 + 2$$

$$f(-24) = 331.776 - 6 * 576 + 2$$

$$f(-24) = 331.776 - 3.456 + 2$$

$$\underline{f(x) = 328.322}$$

