

ESERCIZI TEOREMA DI WEIERSTRASS

VERIFICA DEL TEOREMA

↳ HP CHECK

RICERCA MASSIMI E MINIMI ASS

→ CHECK TEO

→ RICERCA

{ PUNTI STAB.
ESTREMI
(PUNTI di NON DER.)

VERIFICA DEL TEOREMA

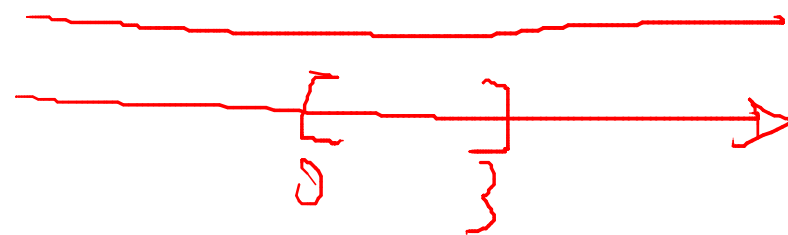
$$y = x^3 - 3x^2 + 4$$

$$[0; 3]$$

chiuso $\rightarrow S_1$

limitato $\rightarrow S_1$

$$D: \mathbb{R}$$



S_1

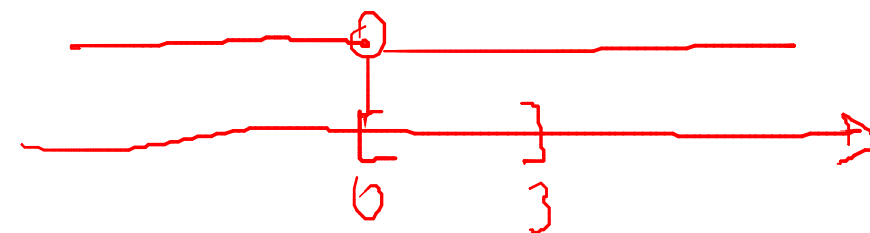
$$y = \frac{x^3 - 3x^2 + 4}{x^2}$$

$$[0; 3]$$

Def? S_1

$$x^2 \neq 0, \quad x \neq 0$$

No



$$y = \sqrt{x-1}$$

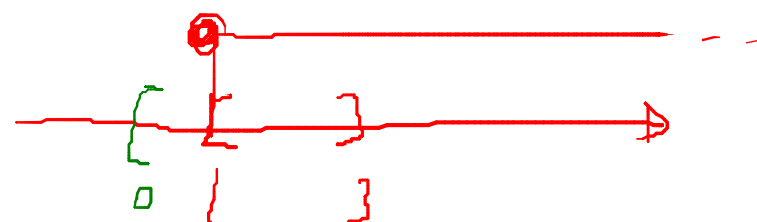
cel? on

$$x-1 \geq 0, \quad x \geq 1$$

S_1

$$[1; 3]$$

$$[0; 3]$$



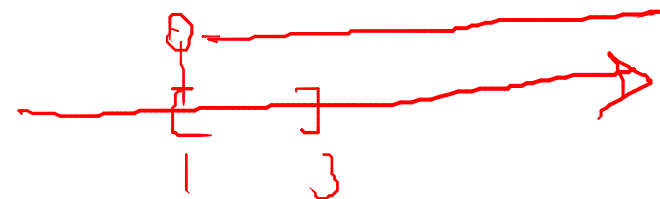
$$y = \ln(x-1)$$

cel? on

$$x-1 > 0, \quad x > 1$$

No

$$[1; 3]$$

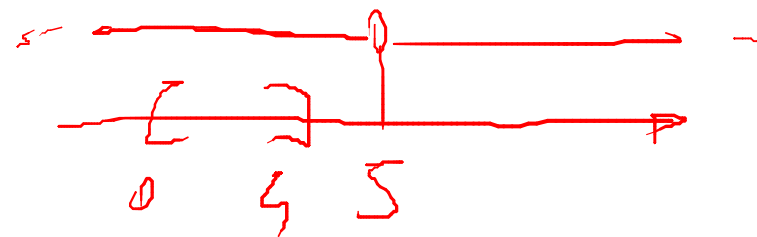


RICERCA MASSIMI E MINIMI ASS

$$y = x + \frac{4}{x-5}$$

$$[0; 4]$$

$$D: x - 5 \neq 0, \quad x \neq 5$$



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$$y = \frac{x^2 - 5x + 4}{x - 5}$$

$$y' = \frac{(2x - 5)(x - 5) - (x^2 - 5x + 4)(1)}{(x - 5)^2}$$

$$y' = \frac{2x^2 - 10x - \cancel{5x} + 25 - x^2 + \cancel{5x} - 4}{(x-5)^2}$$

$$y' = \frac{x^2 - 10x + 21}{(x-5)^2}$$

$$\frac{x^2 - 10x + 21}{(x-5)^2} = 0 \quad x_{1,2} = \begin{matrix} 3 \\ 7 \end{matrix}$$

A(3; 1) MAX ASS

B(0; $-\frac{4}{5}$) min ASS

C(4; 0)

$$y = x + \frac{4}{x-5}$$

$$f(3) = 3 + \frac{4}{3-5} = 3 + \frac{4}{-2} = 3 - 2 = 1$$

$$f(0) = 0 + \frac{4}{0-5} = -\frac{4}{5}$$

$$f(4) = 4 + \frac{4}{4-5} = 4 + \frac{4}{-1} = 0$$