

Esercizio 3. Determinare il limite della successione

$$\begin{cases} a_1 = 1 \\ a_{n+1} = a_n^2 - 2a_n \quad \text{per ogni } n \in \mathbb{N}. \end{cases}$$

1) $f(t) = t^2 - 2t$

2) $g(t) = t^2 - 2t - t = t^2 - 3t$

3) $t^2 - 3t \geq 0 \Rightarrow t(t-3) \geq 0$

$$\begin{cases} t \geq 0 \\ t-3 \geq 0 \rightarrow t \geq 3 \end{cases}$$

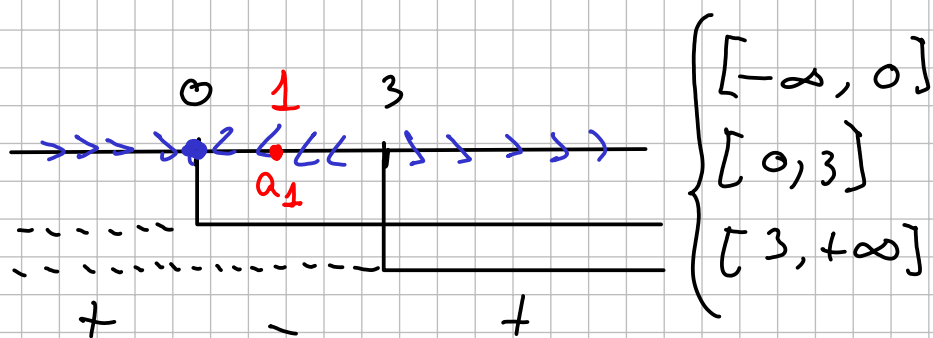


GRAFICO DI $f(t)$. PROP: $0 < a_1 < 3$

$$f(t) = t^2 - 2t$$

$$t=0$$

$$f(t) = 0$$

$$t=1$$

$$f(t) = -1$$

$$t=2$$

$$f(t) = 0$$

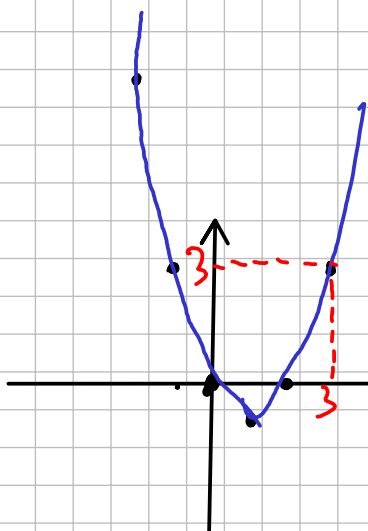
$$t=-1$$

$$f(t) = 3$$

$$t=-2$$

$$f(t) = 8$$

$$t=3 \quad f(3) = 3$$



se $0 < t < 3$ allora $0 < f(t) < 3$??

NO

quindi il limite della successione è?