

$$3^{2n} - 1 = 8 \quad \forall n \geq 1$$

PASO BASE

$$n=1 \quad 3^2 - 1 = 8 = 8 \quad \checkmark$$

$$\textcircled{H.I.} \quad 3^{2n} - 1 = 8 \quad \textcircled{I.I.} \quad 3^{2(n+1)} - 1 = 8$$

$$3^{2(n+1)} - 1 = 3^{2n+2} - 1 = 3^2 \cdot 3^{2n} - 1 =$$

$$= \underline{9} \cdot 3^{2n} - 1 = \underbrace{8}_{8^0} \cdot 3^{2n} + \underbrace{3^{2n} - 1}_{8^0} = 8$$

(Pⁿ H)

$f: [3,7] \rightarrow \mathbb{R}$, cont. y derivable $f(4) > f(7) > f(3)$
 $\Rightarrow \exists c \in (3,7) / f'(c) = 0$

f cont. en $[3,7] \Rightarrow$ cont $[3,4]$ $\left\{ \begin{array}{l} \Rightarrow \exists x_0 \in (3,4) \\ \text{I.D.} \quad \underline{f(x_0) = f(7)} \end{array} \right.$

f es cont. $[x_0,7]$ y derivable $(x_0,7)$ \checkmark I.R

$\exists c \in (x_0,7) / f'(c) = 0$

f cont. $[a,b]$ $\Rightarrow \exists c / f'(c) = d$
 $\underline{f(a)} < d < \underline{f(b)}$