Maximal: E $\{\forall A \in P(E),\ A \subseteq E \Rightarrow A \sim E\}$ (es último elem. $\Rightarrow$ es max.)

Minimal: $\emptyset$ $\{\forall A \in P(E),\ \emptyset \subseteq A \Rightarrow \emptyset \sim A\}$ (es 1er elem. $\Rightarrow$ es min.)

b) Cotas sup.: $\{\{a,b\}, E\}$

Cotas inf.: $\{\emptyset\}$

Supremo: $\{a,b\}$

Ínfimo: $\emptyset$

Ej. 2)

1. $\displaystyle\sum_{i=0}^{n} 2^{5i} = \frac{2^{5n+5}-1}{31}, \quad \forall n \geq 0$

$\underline{n=0}$: $\cdot \displaystyle\sum_{i=0}^{0} 2^{5i} = 2^{5\cdot 0} = 1$

$\cdot \dfrac{2^{5\cdot 0+5}-1}{31} = \dfrac{2^5-1}{31} = \dfrac{32-1}{31} = 1$ $\Big\}$ P(0) es V.

H.I.:
Sup. que vale para $n=k$: $\displaystyle\sum_{i=0}^{k} 2^{5i} = \frac{2^{5k+5}-1}{31}$

T.I.:
Quiero ver si vale para $n=k+1$. $\displaystyle\sum_{i=0}^{k+1} 2^{5i} = \frac{2^{5(k+1)+5}-1}{31}$

Lo vemos:

$$\sum_{i=0}^{k+1} 2^{5i} = \sum_{i=0}^{k} 2^{5i} + 2^{5(k+1)} \underset{\text{H.I.}}{=} \frac{2^{5k+5}-1}{31} + 2^{5(k+1)}$$

$$= \frac{2^{5k+5} - 1 + 31\cdot 2^{5k+5}}{31} = \frac{\underbrace{32}_{=2^5}\cdot \overbrace{2^{5k+5}}^{5(k+1)} - 1}{31}$$

$$= \frac{2^{5(k+1)+5}-1}{31} \quad | \text{ vale.}$$