

TALF 1

Pablo Pardo Fernández

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1 ACTIVITIES

1. Find the power set R^3 of $R = (1, 1), (1, 2), (2, 3), (3, 4)$. Check your answer with the script `powerrelation.m` and write a LATEX document with the solution step by step.

Definition 1.1.12. Power of a relation R^n (*potencia de una relación*)
Given $R \subseteq A \times A$,

$$R^n = \begin{cases} R & n = 1 \\ \{(a, b) : \exists x \in A, (a, x) \in R^{n-1} \wedge (x, b) \in R\} & n > 1 \end{cases}$$

- $R = (1,1), (1,2), (2,3), (3,4)$
- $R^2 = (1,1), (1,2), (1,3), (2,4)$
- $R^3 = (1,1), (1,2), (1,3), (1,4)$