Exercises

E3.82 [024] Using the definition of pair (a, b) as $\{\{a\}, \{a, b\}\}$ show that, given two sets x, y , for each $a \in x, b \in y$ you have

$$(a, b) \in \mathcal{P}\mathcal{P}(x \cup y) \ .$$

Use this fact and the axiom of separation to justify axiomatically the definition of the **Cartesian product** $x \times y$.

Solution 1. *[025]*