

We would like to preserve the laws of the finite case, notably:

- Countable union of disjoint sets

$$pb\left(\bigcup_{i \in I} A_i\right) = \sum_{i \in I} pb(A_i)$$

if I is countable and $\forall i, j. i \neq j \Rightarrow A_i \cap A_j = \emptyset$

- Complementation:

$$pb(\bar{A}) = 1 - pb(A)$$

