

Total Probability

1 Why

2 Result

Proposition 1. Let A_1, \ldots, A_n be a partition of a set of outcomes A. Let \mathbf{P} be an event probability function for some probability mass function. Let $B \subset A$ an event. Then

$$\mathbf{P}(B) = \sum_{i=1}^{n} \mathbf{P}(B \cap A_i)$$

Pro