

# Additivity once more: partitions

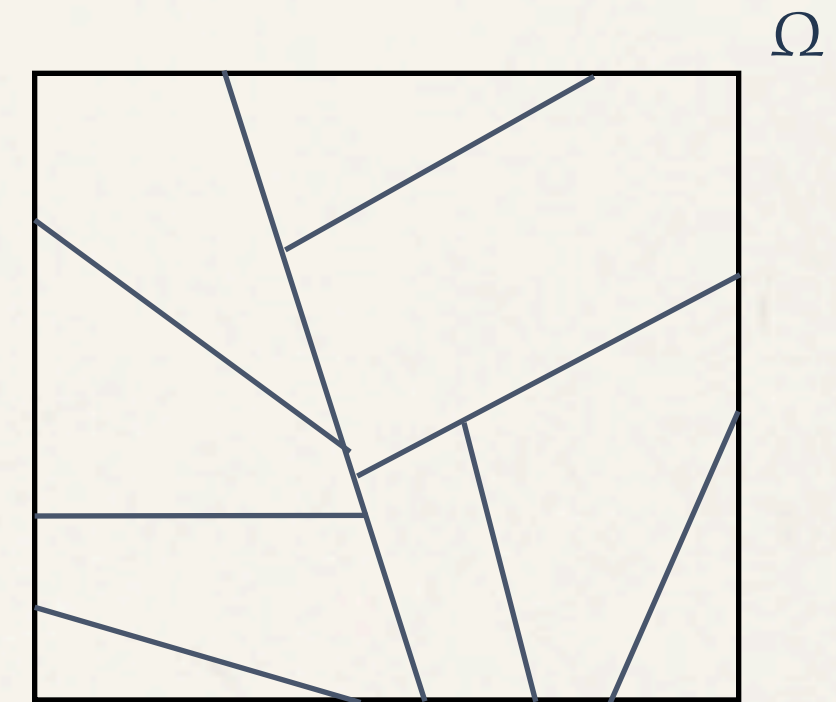
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A *partition*  $\{A_j, j \geq 1\}$  of  $\Omega$ : any finite or countably infinite collection of pairwise disjoint sets,  $A_i \cap A_j = \emptyset$  if  $i \neq j$ , and such that  $\bigcup_j A_j = \Omega$ .



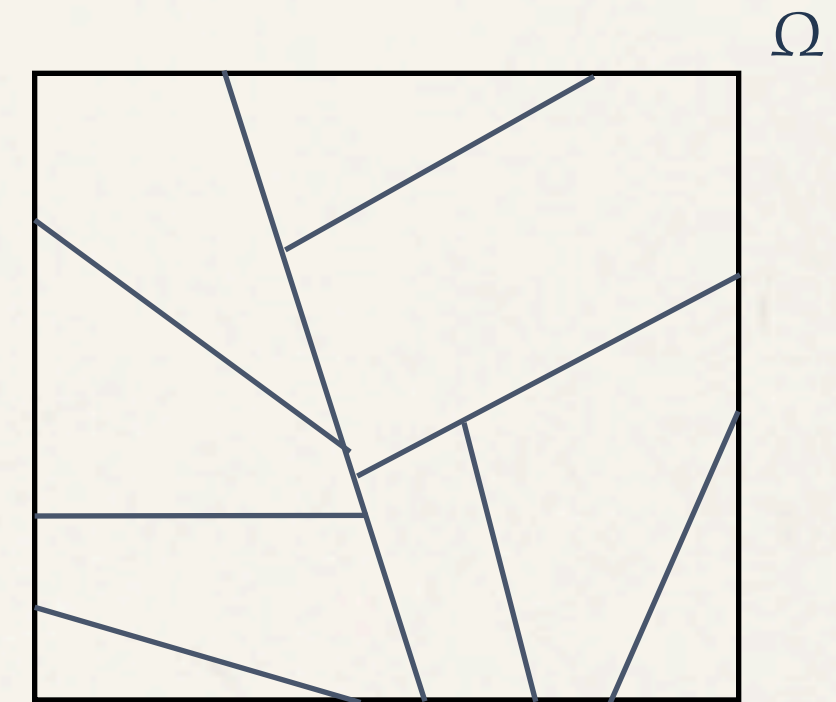


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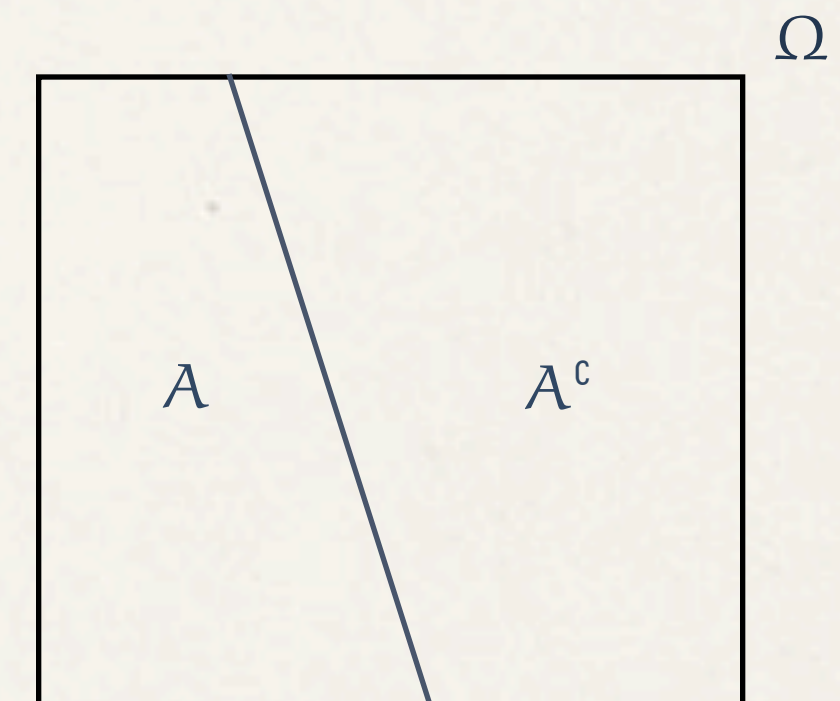
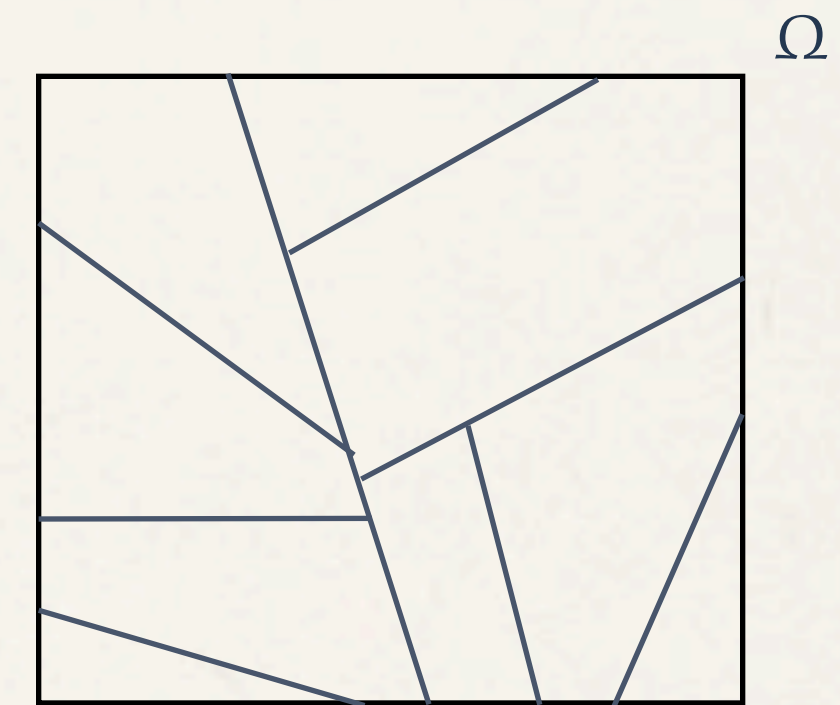
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A *special case*. If  $A$  is any event then  $\{A, A^c\}$  partitions  $\Omega$ :





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$$\mathbf{P}(A) + \mathbf{P}(A^c) = 1$$

