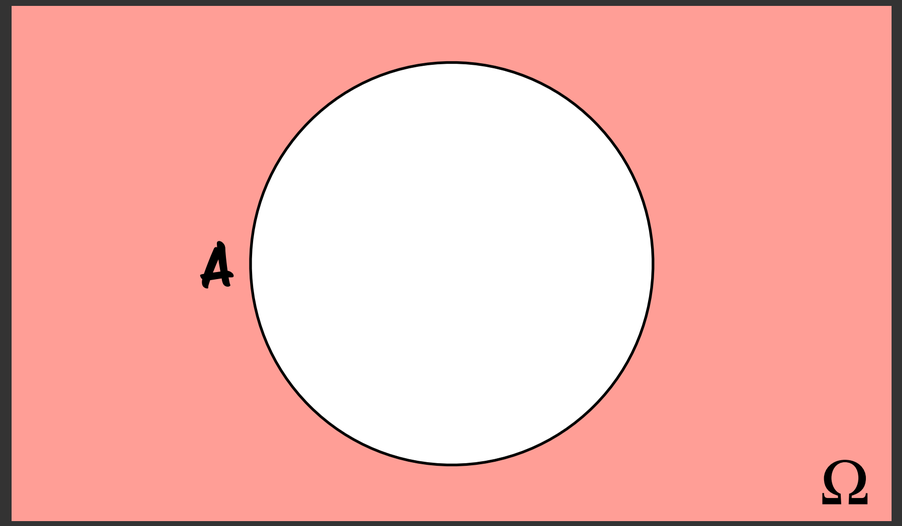
the algebra of events

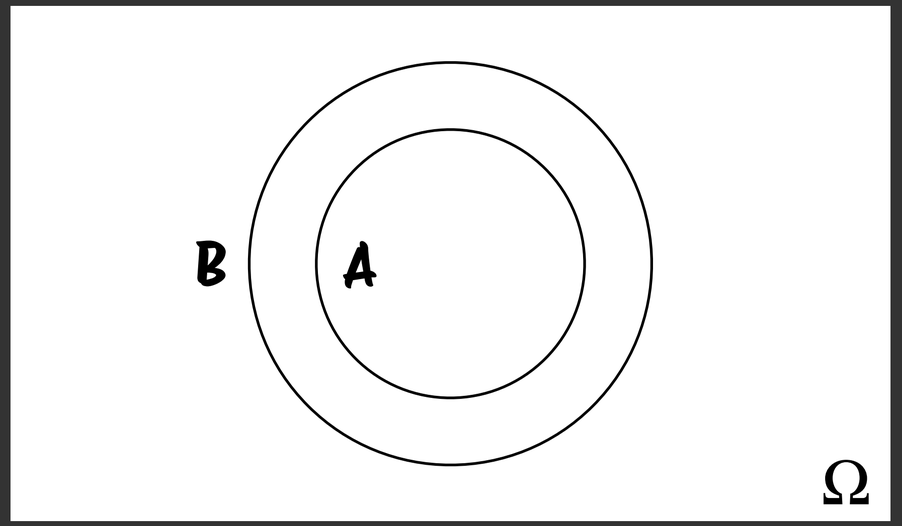
- Often we are interested in combinations of two or more events
- Events are sets (i.e. subsets of the sample space Ω) so we can do the usual set operations
- Assume sample space with two events A and B
  - complement $\overline{A}$ (also denoted A^c or A')
    all elements of S that are not in A
  - subset $A \subset B$
    all elements of A are also elements of B
  - union $A \cup B$
    all elements of Ω that are in A or B
  - intersection $A \cap B$
    all elements of Ω that are in A and B
- These operations can be represented graphically using Venn diagrams

venn diagrams

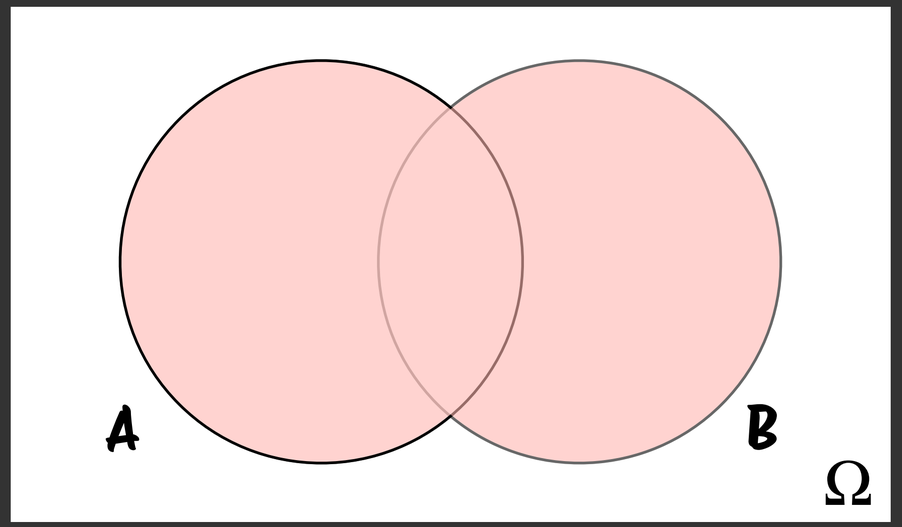
$\overline{A}$



$A \subset B$



$A \cup B$



$A \cap B$