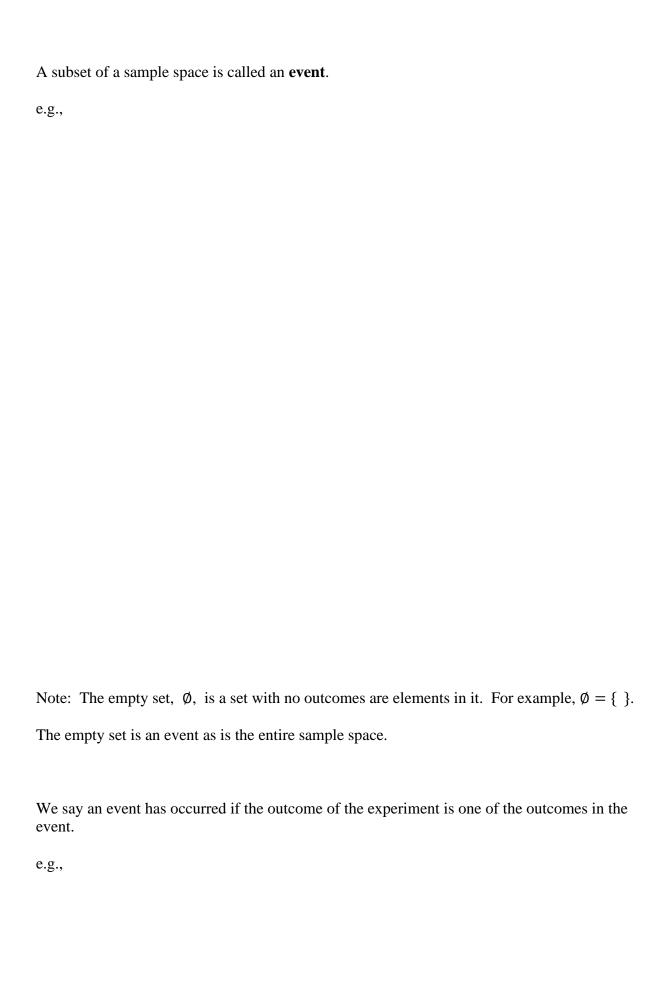
Basic Ideas from Chpt. 2, Sect. 2.1—
An <b>experiment</b> is a process that results in an outcome that cannot be predicted in advance with certainty.
e.g.,
The set of all possible outcomes of an experiment is called the <b>sample space</b> for the experiment.
e.g.,
e.g.,
e.g.,
e.g.,



## **Combining Events**

The **union** of two events, A and B, denoted  $A \cup B$ , is the set of outcomes that belong either to A, to B, or to both. In words,  $A \cup B$  means "A or B." Thus, the event  $A \cup B$  occurs whenever either A or B (or both) occurs. The **intersection** of two events A and B, denoted  $A \cap B$ , is the set of outcomes that belong both to A and to B. In words,  $A \cap B$  means "A and B." Thus, the event  $A \cap B$  occurs whenever both A and B occur. The **complement** of an event A, denoted  $A^C$ , is the set of outcomes that do not belong to A. In words,  $A^C$  means "not A." Thus, the event  $A^C$  occurs whenever A does *not* occur.

## Mutually Exclusive Events

- The events A and B are said to be **mutually exclusive** if they have no outcomes in common.
- More generally, a collection of events  $A_1, A_2, ..., A_n$  is said to be mutually exclusive if no two of them have any outcomes in common.