Section 2.1: Intro to Probability

Monday, January 15, 2018 8:53 AM

probability: used as a tool to evaluate the reliability of conclusions about a population based on a sample

→ if population is known, use probability to give the likelihood of the next experimental outcome

→ if population is unknown, use probability to make statements about population based on your sample

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experiment - process by which an observation (measurement) is obtained

→ ask someone a question
→ make a measurement with an instrument

simple event - the outcome observed on a single repetition of an experiment

examples: roll a six-sided die
can get: 1, 2, 3, ... 6

flip a coin
can: H T

event - a collection of simple events
(sometimes called "compound event")

example: rolling a six-sided die

event "not rolling a one": {2, 3, 4, 5, 6}

"rolling an even number": {2, 4, 6}

mutually exclusive - two events are mutually exclusive if, when one event occurs, the other cannot occur

example: { rolling an odd number
rolling a 2

note: can have events left over: 4, 6

mutually exclusive events do not have to "span the sample space"

simple events are always mutually exclusive