8-7 Probability

Day 1, Skip #44

Introduction: Read page 612

Sample Space: set of all of possible outcomes

Ex 1) one coin tossed

$S = \{H, T\}$

Ex 2) 2 coins tossed

$S = \{HH, TT, HT, TH\}$

Probability: the likelihood of an even occurring

$P(E) = \frac{n(E)}{n(S)}$ equally likely desired outcomes (favorable outcomes) / total sample space (total possible outcomes)

where E = event,
P(E) = 0 means the even is impossible and can never happen,
P(E) = 1 means that the even must occur.

Ex 1) Two coins are tossed. What is the probability that both land heads up?

$P(HH) = \frac{1}{4}$

Ex 2) What is the probability of drawing an ace out of a standard deck of 52?

$P(\text{Ace}) = \frac{4}{52} = \frac{1}{13}$

Ex 3) What is the probability of getting a sum of 4 when tossing a six-sided die twice?

$P(\text{sum of } 4) = \frac{3}{36} = \frac{1}{12}$

1 3
3 1
2 2

$P(e) = 0.58$

$P(e') = 1 - 0.58$

Compliment.

$P(e') = 0.42$