PHIL 105 - Probability, conjunction and disjunction

Notes

Gambler's fallacy

- the believe that something is more likely because it hasn't happened recently or something is less likely because it has happened recently
- in reality the events are just random

Tossing a coin:
P(H) = 1/2
P(T) = 1/2

P(H OR T) = 1

Mutually exclusive

Rolling a dice: Even or prime
Even numbers: 2, 4, 6
Prime numbers: 1, 2, 3, 5 `// assume 1 is prime`

here 2 is shared in even numbers and prime numbers.
2 here is Even AND Prime

P(Even) + P(Prime) - P(Even AND Prime) = 1

Special case

P(A) + P(~A) = 1

P(A) = 1 - (1 - P(A))

Conjunction

Role a 5 and role a 5.

`1/6 * 1/6`

8 pets, 3 birds, 1 green bird
P(bird | green) * P(green) = P(green | bird) * bird

Independence

Sometimes B changes the chance of A. If it does we better use P(A|B).
P(A) = P(A|B) `// then it is independent`