Probability

Probability numbers between 0 and 1, 0 is impossible, 1 is certain

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Interpretations:

- Frequentist-proportion of heads if we toss a coin many times
- Propensity-tendency of a coin to land heads
- Subjectivist-how strongly we believe that a coin will land heads

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Notes:

- Probability vs statistics (prob-likelihood of certain events vs stat-observe results and determine probabilities from which they might have originated)
- Random isnt really randon just chaotic (underlying principles very complicated and tiny changes affect result, just really hard to predict)
- true randomness does exists-radioactive decay
- Quantum mechanics is the only known effect in nature that produces true randomness
- As we roll dice more and more often, the observed frequencies become closer and closer to the frequencies we predict using probability theory. This principle always applies in probability and is called the Law of large numbers.
- As we increase the number of dice rolled at once, we also see that the shape of the probability distribution changes from a triangular shape to a bell-shaped curve. This is known as the Central Limit Theorem.

Sources:

- `https://en.wikipedia.org/wiki/Probability`