
UNIVERSITY OF TEXAS AT AUSTIN

Quiz # 1

VSauce. Veritasium.

Provide your complete solutions for the following problems.

Problem 1.1. (3 points) Every cointoss is random. *True or false? Why?*

Solution: Nope! Physicists were able to construct a machine which produces a deterministic stream of cointosses.

Problem 1.2. (3 points) When did we first start using the word "*random*" in the sense of non-deterministic in the English language?

Solution: In the 1800s.

Problem 1.3. (3 points) What is (approximately) the probability that a US nickel lands on an edge?

Solution: 1/1600

Problem 1.4. (3 points) Who said "*The future, just like the past would be present before its eyes*"?

Bonus question (1 point) State one theorem by this individual!

Solution:

Pierre-Simon Laplace.

For the **bonus question**, you should remember the normal approximation to the binomial:

https://en.wikipedia.org/wiki/De_Moivre-Laplace_theorem

https://en.wikipedia.org/wiki/Pierre-Simon_Laplace

Problem 1.5. (3 points) Who is the founder of *information theory*?

Solution:

Claude Shannon

https://en.wikipedia.org/wiki/Claude_Shannon