

Quiz 3 Answers

Honor policy: For this quiz, you must work alone, and may not use any resources other than your own brain and body, the pencil or pen you use to write your answers, and this sheet of paper.

1. According to Chapter 6 of *The Information* (and class), before joining Bell Telephone Laboratories, where did Claude Shannon work?

- On the Analytical Engine for Charles Babbage
 On the Code Analyzer for Diffie Hellman at the NSA
 On the Differential Analyzer for Vannevar Bush at MIT
 On the Financial Analyzer for Goldman Sacks
 On the Thought Analyzer for J. Edgar Hoover at the FBI

2. According to Claude Shannon's theory of information (introduced in Chapter 7 of *The Information*) how many bits of entropy would a single nucleotide (A, C, G, or T) contain? (assume all nucleotides are evenly distributed)

- 0 bits
 1/2 bit
 1 bit
 2 bits

3. What did Claude Shannon place at the top of his chart on how much information things contain?

- Genetic constitution of a human
 The Internet
 The Library of Congress
 Proceedings on the Institute of Radio Engineers

4. At the end of Chapter 8 of *The Information*, it discusses Claude Shannon's efforts to make computers:

Bake Cookies **Make Music** **Play Chess** **Simulate Nuclear Weapons**

5. According to Chapter 10 of the course book (and class), an object is something that packages:

Procedures and State

This is the end of the quiz.
If you have more time, try to define a *correct* and *efficient* (constant memory, running time linear in the size of the list) mutable list reverse procedure on the back.