

# Monoalphabetic Substitution Ciphers

September 14, 2010

## FREQUENCY ANALYSIS

Q1. Which cipher method generated the ciphertext whose frequency analysis graph is shown below?

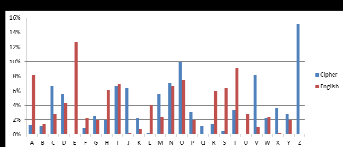
13% A. Transposition

7% B. Atbash

7% C. Shift +8

53% D. Shift -5

20% E. Keyword



Q2. Which cipher method generated the ciphertext whose frequency analysis graph is shown below?

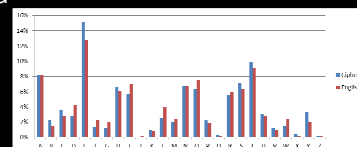
73% A. Transposition

0% B. Atbash

0% C. Shift +8

0% D. Shift -5

27% E. Keyword



Q3. Which cipher method generated the ciphertext whose frequency analysis graph is shown below?

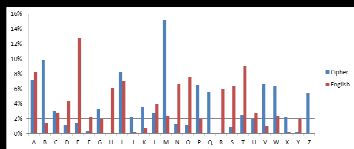
0% A. Transposition

0% B. Atbash

100% C. Shift +8

0% D. Shift -5

0% E. Keyword



Q4. Which cipher method generated the ciphertext whose frequency analysis graph is shown below?

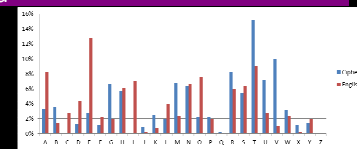
0% A. Transposition

14% B. Atbash

0% C. Shift +8

0% D. Shift -5

86% E. Keyword



## THE ARGENTIS

Source: *The Codebreakers* by David Kahn (1996), pages 112-114.

## Argenti Innovations

- Keyword ciphers
- Elimination of spacing and punctuation
- Elimination of double letters
- Greater use of nulls
- Use of single-digit and two-digit numbers in cipher “alphabets”

## The Argenti

plain	a	b	c	d	e	f	g	h	i	l	m	n	o
cipher	1	86	02	20	82	22	06	60	3	24	26	84	9

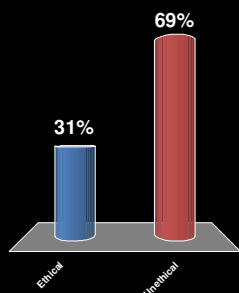
plain	p	q	r	s	t	u	z	et	con	non	che	nulls
cipher	66	68	28	42	80	04	88	08	64	00	44	5, 7

Argenti = 5128068285480377  
 = 5 1 28 06 82 8(5)4 80 3 7 7

## PLAGIARISM (SORT OF)

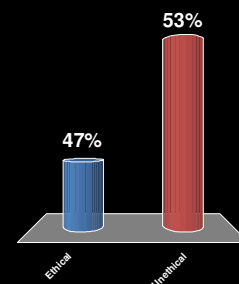
The student next to you drops his test and you accidentally see the answers. This leads you to change one of your answers.

- A. Ethical  
 B. Unethical



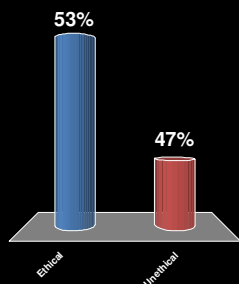
You get a B- on an exam. You would really like a B, so you ask your professor after class for a few extra points on a particular exam question, even though you know your answer probably doesn't deserve a higher score.

- A. Ethical  
 B. Unethical



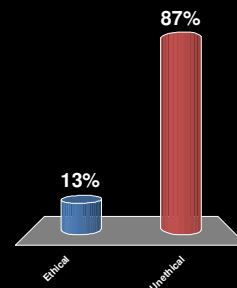
Suppose that one of your spring semester professors assigns a 5-page paper on a topic identical to one assigned by one of your fall semester professors. You received an A- on the fall paper, so you turn the same paper in to your spring professor.

- A. Ethical
- B. Unethical



You find a copy of the instructor's solutions manual to one of your textbooks online. You use it to check your homework before turning your homework in.

- A. Ethical
- B. Unethical



You're writing an essay that doesn't need references and you find some useful ideas online. You decide not to cite these ideas because you've put these ideas in your own words.

- A. Ethical
- B. Unethical

