

Codebusters Answer Key
CPS Regionals @ IIT, 2019

Timed Question (Aristocrats):

1. Using array([15, 8, 4, 1, 9, 5, 10, 16, 23, 19, 25, 22, 2, 12, 14, 11, 7, 18, 0, 20, 6, 3, 13, 21, 24, 17])

Zero indexed: 'a' (0) -> 'p' (15), 'b' (1) --> 'i' (8), ...

I will go up to the sixfingered man and say hello my name is inigo montoya you killed my father
prepare to die.

2. The next code was encoded with a Caesar shift of thirteen

3 People don't think the universe be like it is, but it do.

4. Oldn'o psivfsr tihfdnmvq ieqdnmflr hiv hnihc udfl NOI ivz WHH.

Using

array([8, 20, 7, 25, 22, 19, 16, 11, 12, 24, 2, 4, 17, 21, 3, 10, 15, 13, 14, 5, 18, 0, 6, 9, 1, 23])

In	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
Out	i	u	h	z	w	t	q	l	m	y	c	e	r	v	d	k	p	n	o	f	s	a	g	j	b	x

5. a. Biabju boy Zbxj bkx jmxztbq zbjxj nw Bwwtox. Zubovx pd ptoy.

b. +2 (-2 is if it's in the wrong order)

6. a. This cipher will make a fine addition to my collection.

b. xmsb = (26 - "doit")

7. a. The enigma's encryption was weaker than the Germans thought.

b. Would get the original encoded message

8. Jsbfpfjcz you okppqo pmwag.

9. The matrix just swaps adjacent letters

→ Og llenra Laegrba!

10. Remember to take the multiplicative inverse of the determinant in base 29 rather than regular reciprocal. (det = 23 → inverse is 24 by lookup table (23*24= 552 = 29*19+1))

[[2, 4],

[1, 14]

11. Schroedinger's cat just wants attention.

12. Time's fun when you're having flies.