

Shift and Decimation Ciphers

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Which of the following is MOST important when attempting to figure out an encrypted message?

- A. Logic
- B. Creativity
- C. Luck

Option	Relative Importance
A. Logic	High
B. Creativity	Medium
C. Luck	Low

Do you have a smart phone (camera + apps)?

- A. Yes
- B. No

Response	Count
A. Yes	High
B. No	Low

CQ1: Which of the following is congruent to 7 (mod 10)?

- A. 3
- B. 13
- C. 17
- D. 70

Option	Percentage
A. 3	7%
B. 13	0%
C. 17	93%
D. 70	0%

CQ2: Which of the following are congruent to 7 (mod 5)? (Mark all that apply.)

- A. -7
- B. 2
- C. 7
- D. 22
- E. 35

Option	Count
A. -7	0
B. 2	0
C. 7	High
D. 22	High
E. 35	Medium

CQ3: What is -4 MOD 10?

- A. -6
- B. -4
- C. 4
- D. 6
- E. 14

Option	Percentage
A. -6	0%
B. -4	27%
C. 4	27%
D. 6	47%
E. 14	0%

Shift Ciphers

plain	a	b	c	d	e	f	g	h	i	j	k	l	m
x	0	1	2	3	4	5	6	7	8	9	10	11	12
$(x+5)\text{MOD } 26$	5	6	7	8	9	10	11	12	13	14	15	16	17
cipher	F	G	H	I	J	K	L	M	N	O	P	Q	R

plain	n	o	p	q	r	s	t	u	v	w	x	y	z
x	13	14	15	16	17	18	19	20	21	22	23	24	25
$(x+5)\text{MOD } 26$	18	19	20	21	22	23	24	25	0	1	2	3	4
cipher	S	T	U	V	W	X	Y	Z	A	B	C	D	E

CQ4: Do the multipliers 7 and 33 produce the same or different decimation ciphers?

81% **A. Same**

19% **B. Different**