

Intercepted Transmissions

Intelligence & Context

What You (Eve) Know:

- **Cryptosystem:** You have confirmed that Alice and Bob are securing their communications using a **Caesar Shift** substitution cipher.
- **Key Management:** You know that a **key rotation** scheme is in use where the shift key changes with each round of communication. Furthermore, you suspect that a **keyword** is being used to determine the rotation sequence.
- **Characters:** You know the communicators: Alice is a student in your class, and Bob is her classmate. You are Eve, their course instructor.
- **Purpose:** Unknown to you. You do not know the purpose, subject, or context of their messages.
- **Key Details:** The keyword and the specific numerical shift keys for each round are unknown to you.

Intercepted Messages

Message 1 (Alice to Bob)

- **Length:** 160 letters

FZXKK LQYBI FBSBQ EXQRK XKKLR KZBAM LMNRF WSBP MOR KD LKRPQ
EFPJL OKFKD TBKBS BOBSB KQLRZ EBARM LKQEL PBQEB LOBJP FKVBP
QBOAX VPOBX AFKDX KAPEB DXSBR PYXOB IVQBK JFKRQ BPQLP LISBQ
EOBBM OLLCP

Message 2 (Bob to Alice)

- **Length:** 164 letters

QEXQT XPZLJ MIBQB IVXYP ROAPE BXIPL PMOFK QBAQE OLRDE CLOQV
PIFAB PAROF KDQEB IBZQR OBTFQ ELRQT XIHFK DQEOL RDEXP FKDIB
KRJBO FZXIB UXJMI BJVEX KATXP ZOXM FKGDR PQQOV FKDQL ZLMVA
LTKQE BAFXD OXJP

Message 3 (Alice to Bob)

- **Length:** 153 letters

DWRAU KQHKK GAZWP PDALN KXHAI OAPZQ ABNEZ WUODA ATLAY POQOP
KQOAP AJOKN JKPWP EKJPD WPWLL AWNOJ KSDAN AEJKQ NPATP XKKGW
JZPDA WOEC JIAJP ODAAP EOBQH HKBCH WNEJC PULKO EJPDA BKNIQ
HWO

Message 4 (Bob to Alice)

- **Length:** 160 letters

ESAJP PKDAN KBBEY ADKQN OUAOP ANZWU PKWOG BKNYH WNEBE YWPEK
JXQPO DAFQO PPKHZ IAPKN ANAWZ PDAOQ LLHAI AJPWN UNAOA WNYDL
WLANO DANAB QOAZP KATLH WEJSD WPPDA EJZEY AOEJM QAOPE KJBKQ
NARAJ IAWJP

Message 5 (Alice to Bob)

- **Length:** 166 letters

APMRC ABXWA BMLOZ ILMAN WZBPM AMKWV LXZWO ZIUUQ VOXZW RMKBI
VLLWK SMLBE MVBGX WQVBA NZWUM DMZGW VMNWZ UIZOQ VNWZU IBBQV
OBPMZ CJZQK APMPI VLMLW CBLQL VWBMD MVUMV BQWVL WKCUM VBOMW
UMBZG K WVAB ZIQVB A

Message 6 (Bob to Alice)

- **Length:** 164 letters

APMXC TTMLB PMMFI KBAIU MBZQK SWVBP MNQZA BPWUM EWZSB PMVTI
ABVQO PBAPM UWLQN QMLBP MTIJA XMKQN QKIBQ WVBEM TDMPW CZAJM
NWZMA CJUQA AQWVE QBPHM ZWLMI LTQVM MFBMV AQWVN WZIVG WVMEP
WNQVQ APMLM IZTG

Message 7 (Alice to Bob)

- **Length:** 156 letters

DEMMU XQLUJ EIJKT OVEHX UHCYT JUHCU NQCSE LUHYD WIYNT UDIUS
XQFJU HIYDJ XHUUT QOIXQ BVJXU JEFYS IEDXU HHULY UMSXU SABYI
JMUHU EDBOC UDJYE DUTQI VYLUI USED T VEEJD EJUIT KHYDW XUHB
SJKHU I

Message 8 (Bob to Alice)

- **Length:** 160 letters

JXUSB QIIQL UHQWU YIWEY DWJER UQTYI QIJUH KDBUI IIXUS KHLUI
WUDUH EKIBO MXYSX MUREJ XADEM IXUDU LUHTE UIBUJ KICUU JYDJX
UUDWY DUUHY DWBEK DWUJX YIMUU AUDTQ DTHUL YUMJX UFHER BUCIU
JIJEW UJXUH

CIPHER	L	P	L	I	S	B	Q	E	O	B	B	M	O
plain													
CIPHER	L	L	C	P									
plain													

Final Plaintext

CIPHER	Q	L	Z	L	M	V	A	L	T	K	Q	E	B
plain													
CIPHER	A	F	X	D	O	X	J	P					
plain													

Final Plaintext

CIPHER	D	A	B	K	N	I	Q	H	W	O			
plain													

Final Plaintext

CIPHER	P	E	K	J	B	K	Q	N	A	R	A	J	I
plain													
CIPHER	A	W	J	P									
plain													

Final Plaintext

CIPHER	U	M	V	B	O	M	W	U	M	B	Z	G	K
plain													
CIPHER	W	V	A	B	Z	I	Q	V	B	A			
plain													

Final Plaintext

1. Message

CIPHER	V	G	W	V	M	E	P	W	N	Q	V	Q	A
plain													
CIPHER	P	M	L	M	I	Z	T	G					
plain													

Final Plaintext

1. Message

```
DEMMU XQLUJ EIJKT OVEHX UHCYT JUHCU NQCSE LUHYD WIYNT UDIUS XQFJU HIYDJ XHUUT
QOIXQ BVJXU JEFYS IEDXU HHULY UMSXU SABYI JMUHU EDBOC UDJYE DUTQI VYLUI USEDY
VEEJD EJUIT KHYDW XUHBU SJKHU I
```

Length: 156 letters

2. Key Table

Shift / Key (k): _____[illegible]

3. Decryption

[illegible]

CIPHER	D	W	X	U	H	B	U	S	J	K	H	U	I
plain													

Final Plaintext

CIPHER	E	R	B	U	C	I	U	J	I	J	E	W	U
plain													
CIPHER	J	X	U	H									
plain													

Final Plaintext
