

ONE TIME PAD CRYPTO CHALLENGE

A	B	C	D	E	F	G	H	I	J
1	2	3	4	5	6	7	8	9	10
K	L	M	N	O	P	Q	R	S	T
11	12	13	14	15	16	17	18	19	20
U	V	W	X	Y	Z				
21	22	23	24	25	26				

MESSAGE(M) = **Y(25)** **E(5)** **L(12)** **L(12)** O(15) W(23) K(11) N(14) I (9) F(6) E(5) ← sum = 137

KEY(K) = **13(M)** **20(T)** **23(W)** **5(E)** 14(N) 20(T) 25(Y) 19(S) 9(I) 24(X) ← sum = 172

(FROM AUDIO FILE IN MORSE CODE)

ENCRYPTED MESSAGE = (38(?) 25(?) 35(?) 17(?) 29 (?) 43(?) 36(?) 29(?) 18 (?) 30 (?) 18(?)) Mod26

(Since key is 10 char long and message is 11 just encrypt the last character with M again so just restart from the first char in key to encrypt last char in the message so m(13) + E(5) = 18)

Y(25)	E(5)	L(12)	L(12)	O(15)	W(23)	K(11)	N(14)	I (9)	F(6)	E(5)
M(13)	T(20)	W(23)	E(5)	N(14)	T(20)	Y(25)	S(19)	I(9)	X(24)	M again M(13)
38	25	35	17	29	43	36	29	18	30	18

MESSAGE + KEY = (38(?) 25(?) 35(?) 17(?) 29 (?) 43(?) 36(?) 29(?) 18 (?) 30 (?) 18(?)) Mod26

MOD26 CODE:

```
modTwentySix.py

# Applying the mod 26 operation to the new list of numbers provided
def mod_26(lst):
    return [x % 26 for x in lst]

new_list = [38, 25, 35, 17, 29, 43, 36, 29, 18, 30, 18]
result_new_list = mod_26(new_list)
result_new_list
```

ENCRYPTED MESSAGE = L(12), Y(25), I(9), Q(17), C(3), Q(17), J(10), C(3), R(18), D(4),
R(18) ← sum 136

Decrypted MESSAGE(M) = ? ← sum =