PART I

Decrypt the following cipher text. A tool to simulate the Mono-Alphabetic Subsitution cipher is provided beneath for your assistance.

Here is the table of frequencies of English alphabets for your reference:

a	b	c	d	e	f	g	h	i	j	k	l	m
8.167	1.49	2.782	4.253	12.702	2.228	2.015	6.094	6.966	0.153	0.772	4.025	2.406

n	o	p	q	r	s	t	u	v	w	x	y	z
6.749	7.507	1.929	0.095	5.987	6.327	9.056	2.758	0.978	2.360	0.150	1.974	0.074

```
gkrt niqqrtub nkr lxuun x uetp gxb ve x dihwein kxuu gwvk fxtb uedorq
qeehn el xuu nwmrn. nkr lwtqn x nfxuu orb ve x qeeh vee nfxuu leh krh
ve lwv, civ vkheipk gkwdk nkr nrrn xt xvvhxdvwsr pxhqrt. nkr vkrt
qwndesrhn x cevvur uxcruurq 'qhwto fr',-vkr detvrtvn el gkwdk dxinr
krh ve nkhwto vee nfxuu ve hrxdk vkr orb. x dxor gwvk 'rxv fr' et wv
dxinrn krh ve pheg ve nidk x vhrfrtqein nwmr krh krxq kwvn vkr
drwuwtp.
```

Next Ciphertext

Calculate Frequencies in ciphertext

Ciphertext Frequencies:

a	b	c	d	e	f	g	h	i	j	k	l	m
0.000	1.037	2.282	3.942	8.091	1.452	3.112	5.602	2.075	0.000	8.506	1.452	0.415

n	o	p	q	r	s	t	u	v	w	x	y	z
7.469	1.867	1.452	3.32	11.618	0.622	4.979	5.602	9.959	6.639	7.884	0.622	0.000

PART II

Note that the *cipher text is in lower case* and when you replace any character, the final character of replacement, i.e., *plaintext is changed to upper* automatically in the following scratchpad.

Scratchpad:

```
CHAPTER 1 - DOWN THE RABBIT HOLE: ALICE IS BORED SITTING ON THE
RIVERBANK WITH HER SISTER, WHEN SHE NOTICES A TALKING, CLOTHED WHITE
RABBIT WITH A POCKET WATCH RUN PAST. SHE FOLLOWS IT DOWN A RABBIT HOLE
WHEN SUDDENLY SHE FALLS A LONG WAY TO A CURIOUS HALL WITH MANY LOCKED
DOORS OF ALL SIZES. SHE FINDS A SMALL KEY TO A DOOR TOO SMALL FOR HER
TO FIT, BUT THROUGH WHICH SHE SEES AN ATTRACTIVE GARDEN. SHE THEN
DISCOVERS A BOTTLE LABELLED 'DRINK ME', THE CONTENTS OF WHICH CAUSE HER
TO SHRINK TOO SMALL TO REACH THE KEY. A CAKE WITH 'EAT ME' ON IT CAUSES
HER TO GROW TO SUCH A TREMENDOUS SIZE HER HEAD HITS THE CEILING.
```

Modify the text above (in scratchpad):

This is case *insensitive* function and replaces only cipher text (lower case) by plain text (upper case):

m

Replace cipher character ___ by plaintext character ___   Modify

Use the following function to undo any unwanted exchange by giving an uppercase character and a lower case. This is a case sensitive function:

Replace character ___ by character ___   Replace these exact characters

Breaking the Mono-alphabetic Substitution Cipher

Replace cipher character `m` by plaintext character `Z` [Modify]

Use the following function to undo any unwanted exchange by giving an uppercase character and a lower case. This is a case sensitive function:

Replace character [ ] by character [ ] [Replace these exact characters]

Your replacement history:

You replaced d by C You replaced k by H
You replaced x by A You replaced y by P
You replaced v by T You replaced r by E
You replaced h by R You replaced w by I
You replaced s by V You replaced n by S
You replaced i by U You replaced q by D
You replaced g by W You replaced t by N
You replaced u by L You replaced b by Y
You replaced e by O You replaced c by B
You replaced p by G You replaced e by O
You replaced c by B You replaced p by G
You replaced f by M You replaced o by K
You replaced l by F You replaced m by Z

PART III

Enter your solution plaintext here:

CHAPTER 1 - DOWN THE RABBIT HOLE: ALICE IS BORED SITTING ON THE
RIVERBANK WITH HER SISTER, WHEN SHE NOTICES A TALKING, CLOTHED WHITE
RABBIT WITH A POCKET WATCH RUN PAST. SHE FOLLOWS IT DOWN A RABBIT HOLE
WHEN SUDDENLY SHE FALLS A LONG WAY TO A CURIOUS HALL WITH MANY LOCKED
DOORS OF ALL SIZES. SHE FINDS A SMALL KEY TO A DOOR TOO SMALL FOR HER
TO FIT, BUT THROUGH WHICH SHE SEES AN ATTRACTIVE GARDEN. SHE THEN

Solution Key = XCDQRLPKWZOUFTEYAHNVISGJBM

[Check Answer!]

CORRECT!!

CORRECT!!

PART IV

Plaintext

defend the east wall of the castle

key = phqgiumeaylnofdxjkrcvstzwb   Generate Random

| v Encrypt v | ^ Decrypt ^ |

☐ Remove Punctuation

Ciphertext

giuifg cei iprc tpnn du cei qprcni