Gaius Letters

Time limit: *2500 ms*
Memory limit: *256 MB*

In order to solve this challenge, you will need to break the code used to encrypt it!

M fdahq ime ragzp uz Dayq oazfmuzuzs tgzpdqpe ar xqffqde iduffqz nk Vgxuge Omqemd. Mxx ar ftqy iqdq qzodkbfqp iuft m Omqemd oubtqd iuft ftq wqk egebqofqp fa nq tue nudftpmk uz Vgxk.

Idufq m bdasdmy fa pqodkbf ftq xqffqde.

Azxk ftq mxbtmnqf otmdmofqde rday Mm fa LI mdq qzodkbfqp. Gbbqdomeq mzp xaiqdomeq otmdmofqde mdq qzodkbfqp ftq emyq imk ituxq bdqeqdhuzs ftqud omeq. Zgynqde, ebmoqe, mzp ebqoumx otmdmofqde mdq mxx wqbf gzotmzsqp.

Efmzpmdp uzbgf

Kagd bdasdmy ygef dqmp ftq fqjf ar ftq xqffqde rday ftq efmzpmdp uzbgf iuft m ymjuygy ar $Z = 10000$ otmdmofqde. Ftq uzbgf iuxx nq m efduzs uz m euzsxq xuzq.

Efmzpmdp agfbgf

Kagd bdasdmy ygef bduzf ftq pqodkbfqp fqjf rad ftq uzbgf efduzs fa ftq efmzpmdp agfbgf.

Oazefdmuzfe mzp zafqe

- $1 \leq Z \leq 10^4$

Input	Output	Explanation
U iuxx nq mf ftq eqzmfq fapmk fa tqmd m bqfufuaz rday Fuxxuge. O	I will be at the senate today to hear a petition from Tillius. C	Ftue ime ftq xmef xqffqd ragzp uz ftq mdotuhq. Ftq agfbgf ue ftq pqodkbfqp hqdeuaz ar ftq qzodkbfqp uzbgf.