# Problem 2: Tee scramble 16 points

**Description**

Tee Scramble, singer and songwriter for the band Tilted Sister, is convinced that someone is secretly intercepting her emails and leaking information about her private life to the press. She has therefore written a program to scramble her emails. First, all spaces are converted to asterisk “\*” characters, which are otherwise unused. Then first character of the email remains in its position and the program shifts each subsequent character M positions to the right after the previous character. If a character is shifted beyond the length N of the email, then the position wraps back around the beginning of the email and continues counting the remaining shift positions. Tee randomly assigns the shift length M so that M > 2 and every character in the original email shifts to a unique position in the scrambled email.

For example, suppose Tee wrote the following email:

I'M HAVING DINNER TONIGHT WITH STEVE AT CHEZ BREU-VIE. -TEE

The scramble program would produce the following output for M = 3:

INC'IHMGE\*HZHT\*A\*BVWRIIENTUGH-\*\*VDSIITENE.NV\*EE-R\*T\*AETTEO\*

If instead the scramble program selected M = 7 then the scrambled email would be:

I\*VIGWZ'TEE\*I\*MO\*.DTB\*NA\*IHRHIT-N\*EAG\*TNSUVHCEET-ITHEREVN\*E

One weakness in Tee's scramble is that her email program automatically signs her emails with the string“-TEE” at the end. Using this knowledge someone could write an unscramble. This weakness may turn out to be a good thing for Tee, who has unfortunately deleted the unscramble program by accident and can no longer read her email. Write an unscramble program for Tee that can unscramble her emails. But don't sell it to the gossip newspapers. After all, just because you're paranoid doesn't mean no one is watching you.

Condition: M ≤ 9

**INPUT**

The input line will contain the scrambled email message. The value of M is not provided.

IAEE\*NBH'TR.SGRTM\*\*\*T\*E\*\*CT-EDUWHHOTVI-IAENEENVTVZIE\*NIHI\*G

**OUTPut**

In the first line, program must print the M (shift number) and in the second line the unscrambled email.

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I'M HAVING DINNER TONIGHT WITH STEVE AT CHEZ BREU-VIE. -TEE