
Caesar cipher**P33371_en**

Write a program that encrypts messages with the “Caesar cipher”, used by Julius Caesar to communicate with his generals. Given a constant k , each letter of the original message is replaced by the letter that is alphabetically k positions to its right (circularly, if needed). For instance, if $k = 5$, we must change ‘a’ by ‘f’, ‘b’ by ‘g’, ..., ‘y’ by ‘d’, and ‘z’ by ‘e’.

To solve this exercise, it can be useful a function

```
char encoded(char c, int k);
```

that returns the character corresponding to @c@ when the constant is @k@.

Input

Input consists of several cases. Each case begins with a natural number $k > 0$, followed by a text made up of only lowercase letters and separator characters, but with no spaces, and ended with a dot.

Output

For each case, print in a line the encrypted text, using uppercase letters. Replace each ‘_’ with a space, and leave unchanged the rest of separator characters.

Sample input 1

```
1
i_am_an_example.

22
veni,vidi,vinci.

26000031
yzznhzzn-eznczo-wjiz-yjnzaz_ypqzhv-zidozhjnn.
```

Sample output 1

```
J BN BO FYBNQMF
RAJE, REZE, REJYE
DEESMEES-JESHET-BONE-DOSEFE DUVEMA-ENITEMOSS
```

Problem information

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Generation: 2026-01-25T10:17:46.212Z

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