Problem G. Made in Heaven

Time limit:	1 second
Memory limit:	256 megabytes
input:	`standard input`
output:	`standard output`

A **Stand** is a physical manifestation of a person's "life energy".
It is a power unique to the *JoJo's Bizarre Adventure* series. The Stand
is created from someone's psyche, which includes not only humans but
also other living creatures. That individual is referred to as the Stand User.
The User then gives their Stand a name and uses it for various purposes.

Made in Heaven is a Stand belonging to Enrico Pucci.
It was considered by *DIO* to be the ultimate Stand and the key to achieving
"heaven". Made in Heaven is an extremely powerful close-range time
controlling Stand. Although its physical abilities may not be remarkable,
its control over time grants it an overwhelming speed advantage.

It's just one of many
Stands in *JoJo's Bizarre Adventure.* Each of them has a 6-equal parted
graph Stat(数据) to show its 6 abilities: Destructive Power, Speed, Range,
Stamina(持久), Precision and Development Potential. Patricky thinks
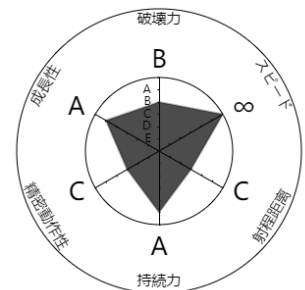the area of Stand Stats is the ability of Stand and he's going to calculate it.

Input

The input contains 6 letters consisting of only O, A, B, C, D, E, X,
representing the quality of Stand given by clockwise starting
with Destructive Power. The letter 'O' means number 0 and 'X' for ∞.
The width between adjacent two level is 1 unit.

Output

Print a single real number — the area.
Your answer will be considered correct if its absolute or relative
error does not exceed 10^{-6}. Formally, let your answer be a, the jury's
answer be b. Your answer will be considered correct if $\dfrac{|a-b|}{\max(1,|b|)} \le 10^{-6}$.

Examples

standard input	standard output
BXCACA	46.3323591
EEEEEE	2.5980762
AACABB	48.06440991
AACAAA	56.2916512

Note

The
shape of **EEEEEE** is a regular hexagon, with area $\dfrac{3\sqrt{3}}{2} \doteq 2.59807621135$.

The Stand with Stats **AACABB** is *DIO*'s *The World*!

The Stand with Stats **AACAAA** is *Star Platinum*.