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## Problem A. IWorm

Input file:              
Output file:           output.txt  
Time limit:            2 seconds  
Memory limit:         256 megabytes

Max turned out to be an electronics engineer, and Bob — an expert in computer networks. Simon told them about the new model of public utility counter which needed software improvement, and he persuaded them to come. However, everything was completely different in reality. Simon wanted people to purchase new counters. But how to convince consumers that they absolutely urgently need to purchase and install the new model? The answer was obvious to Simon: every old counter had to stop working.

— Frankly speaking, Simon wants to force consumers to update the software using a glib excuse. This update will contain the injection, which causes counters to stop working. And Simon will swallow up the market! — Max pointed and slightly pressed his finger on the tablet. A red apple and a worm that was happily getting out of it were shown on the display.

Max is playing the following game. There is a field of  $7 \times 5$  cells. Cells in the first and the last row are holes where the Apple Worm could be placed. Other cells contain apple, pear or nothing.

When Apple Worm sits in a hole, an apple can be selected for the worm. He reaches out from the hole's center to the center of the cell that contains the apple and eats it. At that moment we can assume that the Apple Worm is a segment. Of course, this segment can pass through other cells (if it touches only a corner of a cell, it is not taken into consideration). If there are apples in the passed cells, the Apple Worm eats these apples too.

However, there is a problem: the Apple Worm does not like pears. Not one bit. If the line segment that connects his hole and the selected apple, passes through at least one cell with a pear, it spoils his appetite and he will not eat any apples.

Your task is: given the positions of the apples and the pears, determine the maximum amount of apples the Apple Worm can eat at once. Also, specify the hole, where the Apple Worm should be placed.

### Input

The input contains the description of a field of  $5 \times 5$  (holes are not shown).

Apples are denoted by the Latin letter *A* and pears by the Latin letter *P*, empty cells by a dot.

It is guaranteed that there is at least one apple on the field.

### Output

Output on the first line an integer — the maximum amount of apples that the Apple Worm can eat.

In the second line, you should output two integers separated by space — the number of the row (1 for the top row, or 7 for the bottom row) and the number of the column, which are the coordinates of the hole, where the Apple Worm should be placed.

Then, output on the third line two integers, separated by a space — the row and the column numbers of the cell that contains the selected apple.

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## Examples

| input.txt | output.txt |
|-----------|------------|
| .A..A     | 5          |
| .AP.A     | 1 2        |
| .PA.A     | 6 3        |
| ..APA     |            |
| ..APP     |            |
| AAP..     | 7          |
| AAAP.     | 1 1        |
| APAAP     | 5 4        |
| AP.AA     |            |
| AP..P     |            |