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## Integer square roots

P63448\_en

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The integer square root of a natural number  $x$  is a natural number  $a$  such that  $a^2 \leq x$  but  $(a + 1)^2 > x$ . For instance, the integer square root of 100 is 10, and it is also of 120.

Write a program that reads natural numbers and prints their integer square roots. Your program must include the function

```
int root (int x);
```

that returns the integer square root of a natural number  $x \leq 10000$ .

### Input

Input is a sequence of natural numbers.

### Output

For each number  $x$  of the output, print in a line and separated by a space,  $x$  and its root.

#### Sample input

```
100
120
121
225
226
```

#### Sample output

```
100 10
120 10
121 11
225 15
226 15
```

### Problem information

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