
Computing areas

P39057_en

Write a program that reads several descriptions of rectangles and circles, and for each one prints its corresponding area.

Input

Input begins with a number n , followed by n descriptions. If of a rectangle, we have the word "rectangle" followed by two strictly positive real numbers: its length and its width. If of a circle, we have the word "circle" followed by a strictly positive real number: its radius.

Output

For each description, print its area with 6 digits after the decimal point.

Sample input

```
2
rectangle 10 2.5
circle 100
```

Sample output

```
25.000000
31415.926536
```

Problem information

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