# Problem D. Range Estimate

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|---|---|
| Input file: | estimate.in |
| Output file: | estimate.out |
| Time limit: | 3 seconds |
| Memory limit: | 256 megabytes |

We're generating several random floating-point numbers as follows. We start by picking a random $r$, a uniform floating-point number between 0 and 1000. Then, we pick $n$ independent random uniform floating-point numbers between 0 and $r$.

Given those $n$ numbers, can you guess what $r$ was?

Of course, you don't need to guess exactly. See the output format for the required precision.

## Input

The first line of the input file contains one integer $t$, the number of testcases, which will always be one hundred thousand: $t = 10^5$. The next $t$ lines will contain one testcase each. Each testcase is an integer $n$ ($5 \le n \le 10$, picked uniformly independently randomly), followed by $n$ floating-point numbers generated according to the problem statement, and printed with 3 digits after the decimal point.

## Output

The output file should contain $t$ lines. Each of those $t$ lines should be a floating-point number, your guess for what $r$ was in the corresponding testcase. Your answer will be considered correct if the average difference (the absolute value of the difference) between your answer and the correct answer over all hundred thousand cases doesn't exceed 44.

## Examples

| estimate.in |
|---|
| 5<br>10 14.567 213.932 59.735 92.798 94.233 2.682 94.918 37.214 86.303 13.241<br>5 86.570 120.219 46.774 182.909 186.631<br>7 332.938 205.974 309.560 385.298 120.209 401.062 420.374<br>6 251.248 595.136 248.930 795.932 499.233 421.866<br>6 626.649 335.461 77.257 386.181 395.272 322.389 |
| **estimate.out** |
| 218.55855928539492<br>222.16512101541008<br>594.4831558089593<br>871.3578049742099<br>638.185410820347 |

## Note

There are 10 tests in this problem. Note that the first test is larger than the example input, as it contains $10^5$ testcases instead of 5. You can download the first test at http://forest.acm.petrsu.ru/tests/estimate.in and the values of $r$ used to generate it at http://forest.acm.petrsu.ru/tests/estimate.ans.