Problem K. Hull Marathon

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	256 mebibytes

Eels like a sport called Hull Marathon. This sport is played by teams. In the beginning of a game, all team members gather at the origin. When the game starts, team members can start running, and one minute later the winning team will be decided by the area of the convex hull of all team members. (Team members are considered as points on a plane). Snuke is the coach of a team with N eels. The i-th eel can run at most r_i in a minute. Compute the maximal possible area of the convex hull when this team plays optimally.

Input

First line of the input contains one integer N. Then N lines follow, i'th iof them contains one integer r_i.

Constraints:

- $3 \leq N \leq 8$
- $1 \leq r_i \leq 1000$
- All numbers in the input are integers.

Output

Print the maximal possible area of the convex hull in a line. You may print arbitrary number of digits, but the absolute error or the relative error must be at most 10^{-6}.

Examples

standard input	standard output
4 5 8 58 85	2970.000000000
6 1 1 1 1 1 1	2.598076211