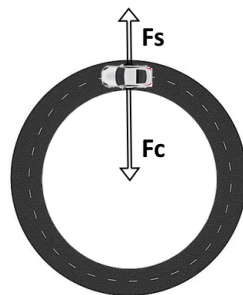

Problem A. Speed Limit

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

According to theSunDaily, 80 percent of the road accidents are due to human errors. Road Safety Department in Malaysia published statistics of 65,850 deaths between 2004 and 2013. Datuk Tam Weng Wah, director general of the department, mentioned: "The police and other relevant authorities are doing their part and its the responsibility every vehicle owner to abide the law and ensure safety of himself and that of passengers,". He also stressed out the important of considering speed limits and focusing on the road by giving an example to theSunDaily said: "If you are driving at about 100 km/h then your car would have moved 20-30 metres in that one second where you did not pay attention; we have to arrest this trend because if everybody is doing it, then people will start thinking that it is perfectly fine to do so."

After publishing the article, a road construction company decided to help the Road Safety Department by recalculating the roads speed's limits. Your task in this project is calculating maximum speed a vehicle can have without slipping on a roundabout or a circular road. The figure below shows the free-body diagram of a car. Based on the diagram centripetal force (F_c), a force that makes a body follow a curved path, and friction force (F_s), a force that is created whenever two surfaces move or try to move across each other, are main concerns in this problem. Using formula provided, write a program to find the maximum speed (V) for roads with different curvature radius (R) in different weather conditions, which leads to change of friction coefficient (μ). You can assume that the road are flat with no slopes.



$$F_s = \mu \times m \times g$$

$$F_c = m \frac{V^2}{R}$$

$$[g \text{ (Gravity coefficient)} = 9.8]$$

Input

First line of input is an integer ($0 < T \leq 10000$) representing number of cases. Each case consists of three real numbers: friction coefficient ($0.4 \leq \mu \leq 0.9$), road radius (R) and vehicle's mass (m).

Output

For each test case, output a line containing M the speed limit of the road rounded to 8 decimal point.

Example

standard input	standard output
3	6.26099034
0.4 10 200	38.34057903
0.6 250 55	130.95800854
0.5 3500 450	