Problem SLOWWLAN: WLAN is too slow...

"...and cable connections are too expensive."
But this is not the answer the minister of science in our ambitious country wanted to hear. So he asked his best assistants to search for an efficient, inexpensive, and fast network system to connect the skyscrapers of our big cities. While surfing on the internet for any good ideas the scientists encountered one interesting website, from which they learned about free space optics technology The scientists further enhanced this technology to speed up the network connection. But prior to series production they start a pilot project to test the new features.

The system connects two points in a point-to-point-network with an incredible connection speed. But the link quality decreases with the distance between transmitters. You can compute the link quality q by using the following formula: $q = \frac{1}{d^2}$ while d denotes the distance. One transmitter can be used only for exactly one connection, but the connection works bidirectional. So you need connection two transmitters (for the two connected locations) are needed.

Because of their costs as few transmitters as possible should be used, i.e. if you have to connect n locations the minister of science authorizes to set up $n-1$ connections only. Fortunately this is enough to build up a complete network between any location. But which locations should be connected? The overall link quality should be as good as possible - and some engineers agreed about the estimation of the network goodness g while connecting n locations with link qualities q_i:

$$g_n = \frac{q_1 + q_2 + \ldots + q_{n-2} + q_{n-1}}{n-1}$$

Figure 1: example network (not the optimal one)

Input

The input consists of several scenarios. Each scenario starts with an integer l ($2 \leq l \leq 1,000$), the number of skyscrapers that should be connected in the pilot phase.
The next l lines specify the exact location of the transmitter on top of the buildings in a three-dimensional coordinate system (three double values in the intervall $[-100.0 \leq x \leq 100.0]$). You can safely assume, that the distance between two transmitter locations is never less than 2. Furthermore, the locations are choosen, so there is no connection that is obstructed neither by an other location nor by a building. The last line of each testcase contains a threshold level t for a network goodness to be acceptable. There is a blank line between two consecutive testcases.
The input is terminated by *EOF*.

Output

Compute the best possible network goodness, i.e. the *maximal* value for g. If this value is bigger than the threshold t, print one line containing the string "`Test series can be started today.`", otherwise one line "`Bad idea!`".

Sample Input 1

```
4
1.0 1.0 0.0
4.0 1.0 0.0
1.0 2.0 0.0
3.0 4.0 0.0
0.35

4
1.0 1.0 0.0
4.0 1.0 0.0
1.0 2.0 0.0
3.0 4.0 0.0
0.45
```

Sample Output 1

```
Test series can be started today.
Bad idea!
```