Territory Deployment

1 second, 64 megabytes

Fraxinus is one of the five airships used by Ratatoskr. The command center of Ratatoskr is located on the airship, making it a very important base to its members. It usually hovers about 15 km above the Tengu City. It is shown to have several defensive and offensive capabilities.

The airship has 8 **Basic Realizers** ("Manifestation Device") and 10 **Control Realizers** to control its **Permanent Territory** which have to following capability.

- **Invisible**: Cloaks the entire airship. Used while in non-combat mode.
- **Avoid**: Used in conjunction with <Invisible> and is supposed to prevent collisions with animals/vehicles which happen to be on collision course.
- **Protect**: Defense System used to defend the ship. Its scale of diameter can be changed according to the Commander of the ship. It can be thickened and expanded depending on the need. This defense system is also powered by Yggd Folium.
- **Yggd Folium**: Small, leaf-shaped units equipped to Fraxinus, each having an independent Realizer to perform functions remotely.

Kannazuki is the vice-commander of Fraxinus. He is highly skilled in controlling the ship and is an ace in combat. He knows that deploying a territory shield using a basic realizer in a small, concentrated area is much more energy-efficient and significantly reduces shield integrity loss when defending against enemy attacks. However, this means that if there are multiple attacks at the same time, multiple territory shields must be deployed simultaneously.

To increase efficiency and prevent excessive strain on the realizers working together, the territory shields must be linked with thin energy lines. These lines consume energy proportional to the distance between the territory shields.

Territory Deployment

The commander of DEM's enemy ship, Ellen, will attack Fraxinus with multiple energy beams. She wants you to write a program to calculate the total amount of energy Fraxinus will lose from this stream of attacks.

Formula for energy consumption : $\lfloor L \rfloor$; L stands for range between two territories.

Constrain: $\{1 \leq n \leq 100, 1 \leq x, y, z \leq 1000, 1 \leq k \leq 1000\}$

input:

1st line: n amount of attack

2nd to n+1 line: x y z (position) and k (energy needed to be put into each shield)

output:

Input	Output
2 1 1 1 3 2 2 2 4	9
1 3 898 1 0	0

Author:	Jump
Idea:	Anime: date a live