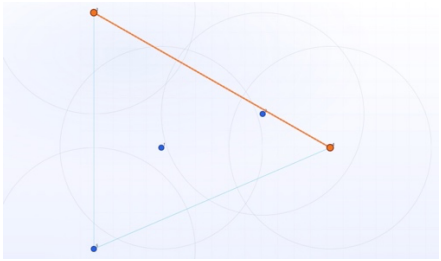
H. Sensor Network and Two Farthest Stations

Constraint: Time Limit: 3 seconds, Memory: 128MB



Problem Statement

The National Climate Research Institute is deploying a **sensor network** to measure temperature and humidity in a remote mountainous region. The network consists of **n** sensor stations ($2 \leq n \leq 2 \times 10^5$), where each station is placed at a position with coordinates (x_i, y_i) on a plane ($-10^9 \leq x_i, y_i \leq 10^9$, all coordinates are integers).

To design an efficient communication system, researchers need to identify **the two farthest sensor stations** in the network. This information helps:

- Estimate the **network diameter** (maximum coverage)
- Determine the **minimum transmission power** required to ensure full network connectivity

Requirement: Write a program to calculate the **square of the maximum Euclidean distance** between any two sensor stations in the network.

Input/ Output Format

Input	Output
▪ First line: A positive integer **n** - the number of sensor stations ▪ Next **n** lines: Each line contains two integers x_i and y_i - the coordinates of the i-th sensor station	A single integer: The square of the maximum Euclidean distance between any two sensor stations in the network. The result is guaranteed to fit within a 64-bit integer type

Example

Input	Output
5 0 0 3 1 -2 4 5 0 -2 -3	65

The network has 5 sensor stations at positions:

- Station 1: (0, 0)
- Station 2: (3, 1)
- Station 3: (-2, 4)
- Station 4: (5, 0)
- Station 5: (-2, -3)

The farthest pair is **station 4 (5, 0)** and **station 3 (-2, 4)**.

Squared distance = $(5-(-2))^2+(0-4)^2=7^2+4^2=49+16=65$