**MINIMUM TIME TO REPAIR CARS**

You are given an integer array ranks representing the **ranks** of some mechanics. ranksi is the rank of the ith mechanic. A mechanic with a rank r can repair n cars in r \* n2 minutes.

You are also given an integer cars representing the total number of cars waiting in the garage to be repaired.

Return *the****minimum****time taken to repair all the cars.*

**Note:** All the mechanics can repair the cars simultaneously.

**Example 1:**

**Input:** ranks = [4,2,3,1], cars = 10

**Output:** 16

**Explanation:**

- The first mechanic will repair two cars. The time required is 4 \* 2 \* 2 = 16 minutes.

- The second mechanic will repair two cars. The time required is 2 \* 2 \* 2 = 8 minutes.

- The third mechanic will repair two cars. The time required is 3 \* 2 \* 2 = 12 minutes.

- The fourth mechanic will repair four cars. The time required is 1 \* 4 \* 4 = 16 minutes.

It can be proved that the cars cannot be repaired in less than 16 minutes.​​​​​

**Example 2:**

**Input:** ranks = [5,1,8], cars = 6

**Output:** 16

**Explanation:**

- The first mechanic will repair one car. The time required is 5 \* 1 \* 1 = 5 minutes.

- The second mechanic will repair four cars. The time required is 1 \* 4 \* 4 = 16 minutes.

- The third mechanic will repair one car. The time required is 8 \* 1 \* 1 = 8 minutes.

It can be proved that the cars cannot be repaired in less than 16 minutes.​​​​​

**Constraints:**

* 1 <= ranks.length <= 105
* 1 <= ranks[i] <= 100
* 1 <= cars <= 106