

5187. Minimum Garden Perimeter to Collect Enough Apples

My Submissions (/contest/weekly-contest-252/problems/minimum-garden-perimeter-to-collect-enough-apples/submissions/)

[Back to Contest \(/contest/weekly-contest-252/\)](/contest/weekly-contest-252/)

In a garden represented as an infinite 2D grid, there is an apple tree planted at **every** integer coordinate. The apple tree planted at an integer coordinate (i, j) has $|i| + |j|$ apples growing on it.

You will buy an axis-aligned **square plot** of land that is centered at $(0, 0)$.

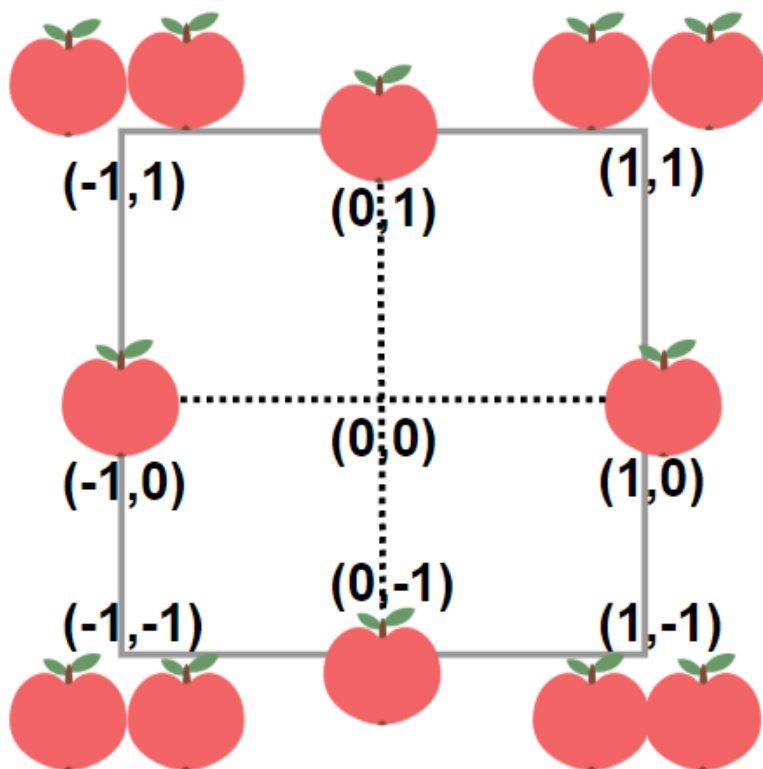
Given an integer `neededApples`, return the **minimum perimeter** of a plot such that **at least** `neededApples` apples are **inside or on the perimeter** of that plot.

The value of $|x|$ is defined as:

- x if $x \geq 0$
- $-x$ if $x < 0$

User Accepted:	0
User Tried:	0
Total Accepted:	0
Total Submissions:	0
Difficulty:	Medium

Example 1:



Input: `neededApples = 1`

Output: 8

Explanation: A square plot of side length 1 does not contain any apples.

However, a square plot of side length 2 has 12 apples inside (as depicted in the image above). The perimeter is $2 * 4 = 8$.

Example 2:

Input: neededApples = 13**Output:** 16**Example 3:****Input:** neededApples = 1000000000**Output:** 5040**Constraints:**

- $1 \leq \text{neededApples} \leq 10^{15}$

JavaScript



```
1 const minimumPerimeter = (neededApples) => {
2   let low = 1, high = 10 ** 6;
3   while (low < high) {
4     let m = low + high >> 1;
5     let tot = m * (1 + m) * (2 * m + 1) * 2;
6     tot < neededApples ? low = m + 1 : high = m;
7   }
8   return low * 8;
9 };
```

☐ Custom Testcase

Use Example Testcases

Run

Submit

Submission Result: Accepted (/submissions/detail/531416280/) ?

More Details > (/submissions/detail/531416280/)

Share your acceptance!

8/1/2021

Minimum Garden Perimeter to Collect Enough Apples - LeetCode Contest

[Help Center \(/support\)](/support/) | [Jobs \(/jobs\)](/jobs/) | [Bug Bounty \(/bugbounty\)](/bugbounty/) | [Online Interview \(/interview/\)](/interview/) | [Students \(/students\)](/students/) |

[Terms \(/terms\)](/terms/) | [Privacy Policy \(/privacy\)](/privacy/)



[United States \(/region\)](/region/)