Problem 75 - Singular Integer Right Triangles

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23 July 2018

This document originally appeared as a blog post on my website. Find it at gautammanohar.com/euler/75.

1 Problem Statement

For how many values $P \leq N$ is there exactly one way to form a right triangle with integer side lengths and perimeter P?

2 My Algorithm

See my solution to Project Euler 39, as the techniques I use there are exactly the ones I use for this problem. The only difference is that we count only "singular" values of P, and we binary search on the index of the greatest value up to N. Our solution has time complexity $O(N_{\max} + T \log N_{\max})$, where T is the number of test cases.