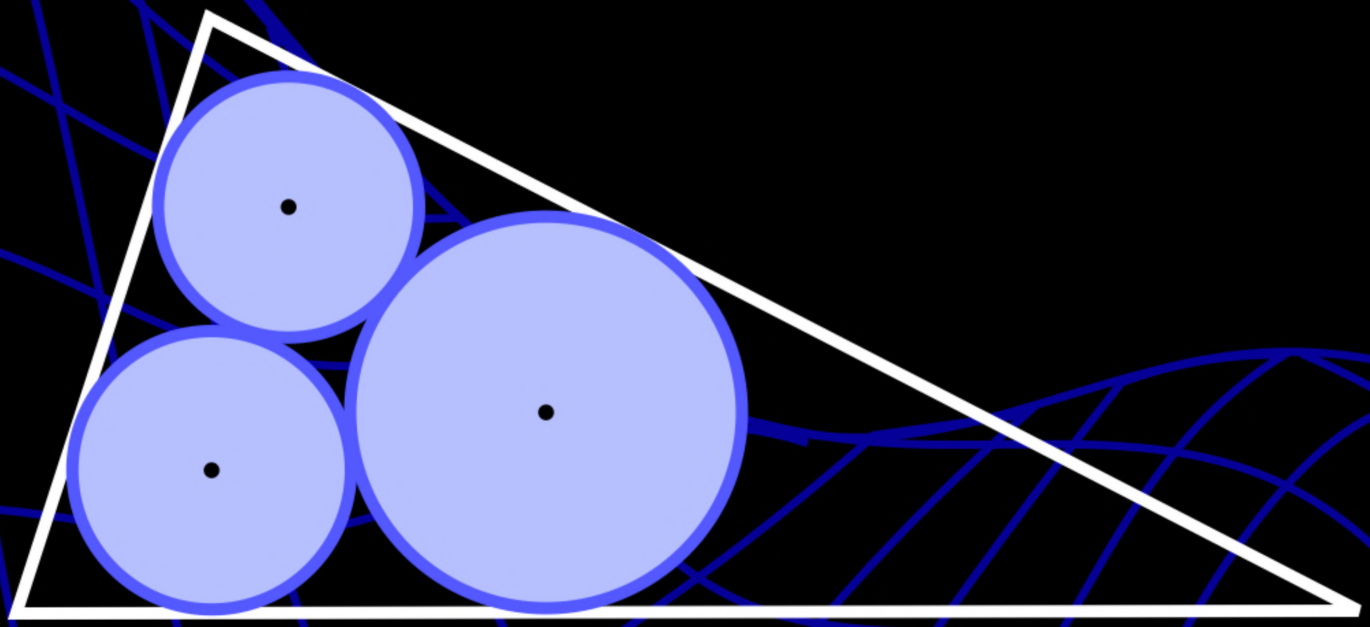
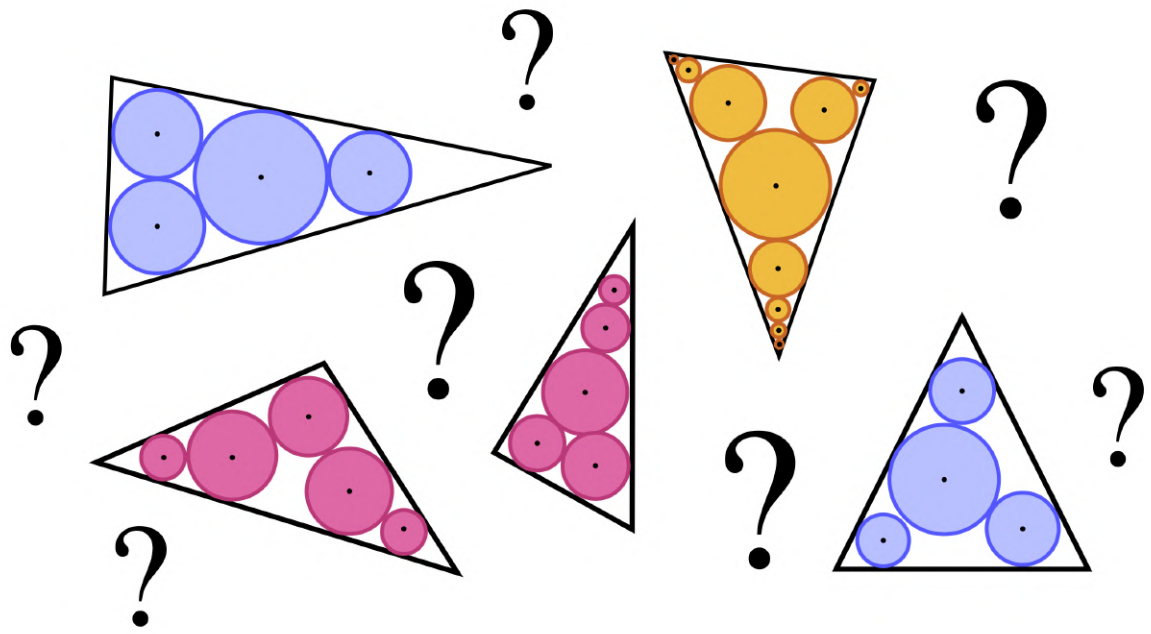
Malfatti Circles
and the
Greedy Algorithm



Malfatti Circles & the Greedy Algorithm

by DiBeos



"Mathematics is not a careful march down a well-cleared highway, but a journey into a strange wilderness where the explorers often get lost."
– W.S. Anglin

Do not forget to check out our catalogue of **PDFs right here** You might find something that interests you!

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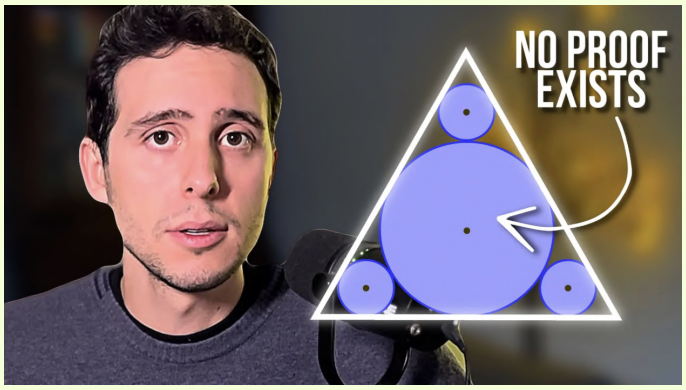
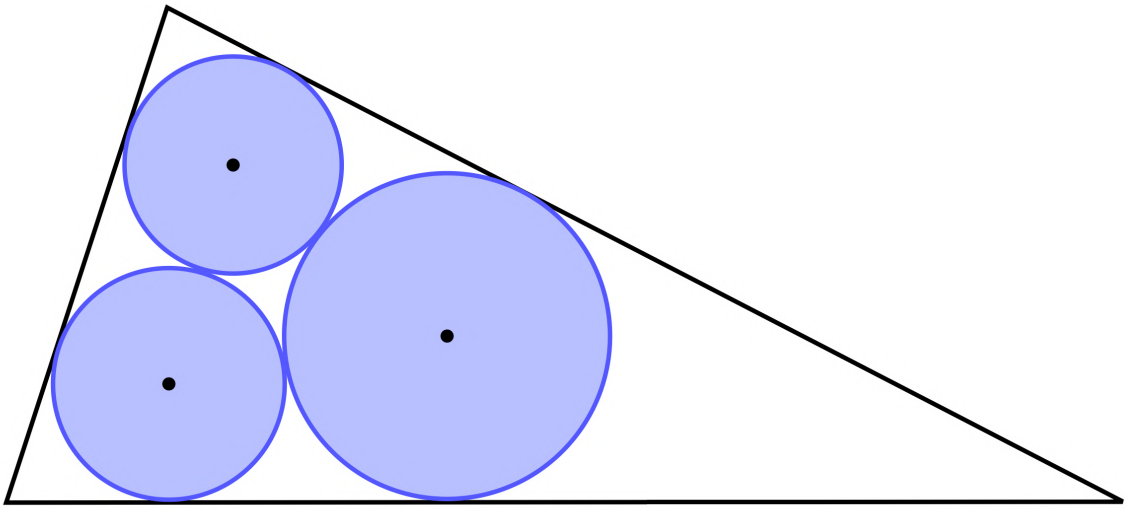
This PDF is a deeper look at the material discussed in the following YouTube video:



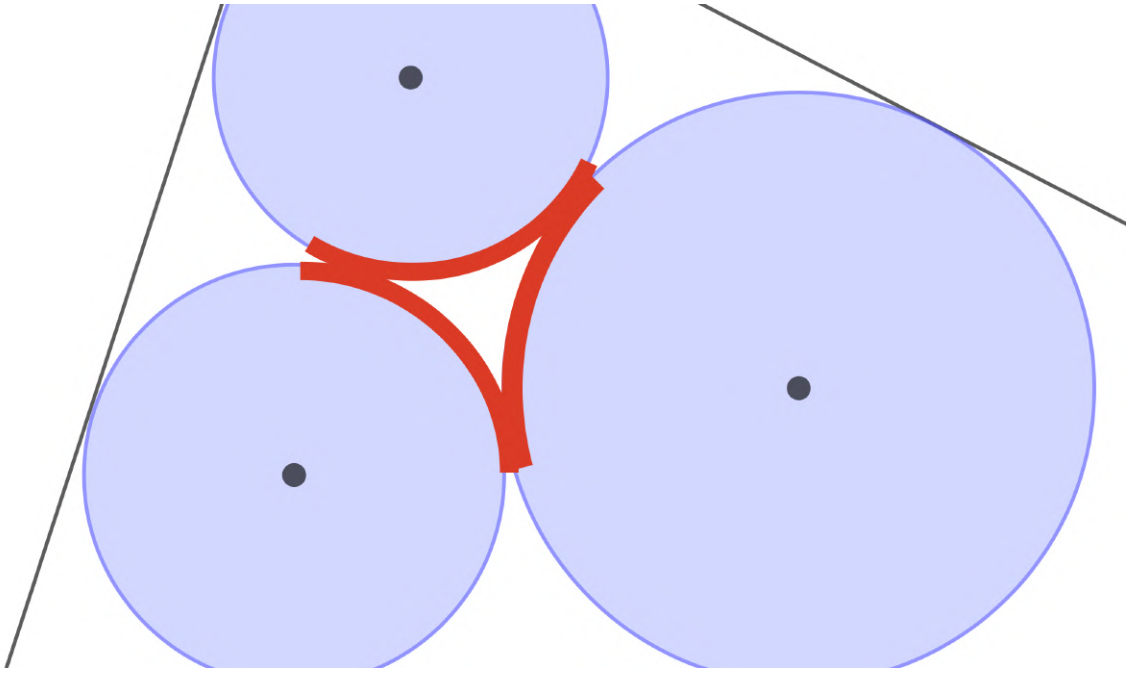
The Simple Problem Mathematicians Got Wrong.

We highly recommend watching the video first to get a basic understanding, and then reading this PDF.

Introduction

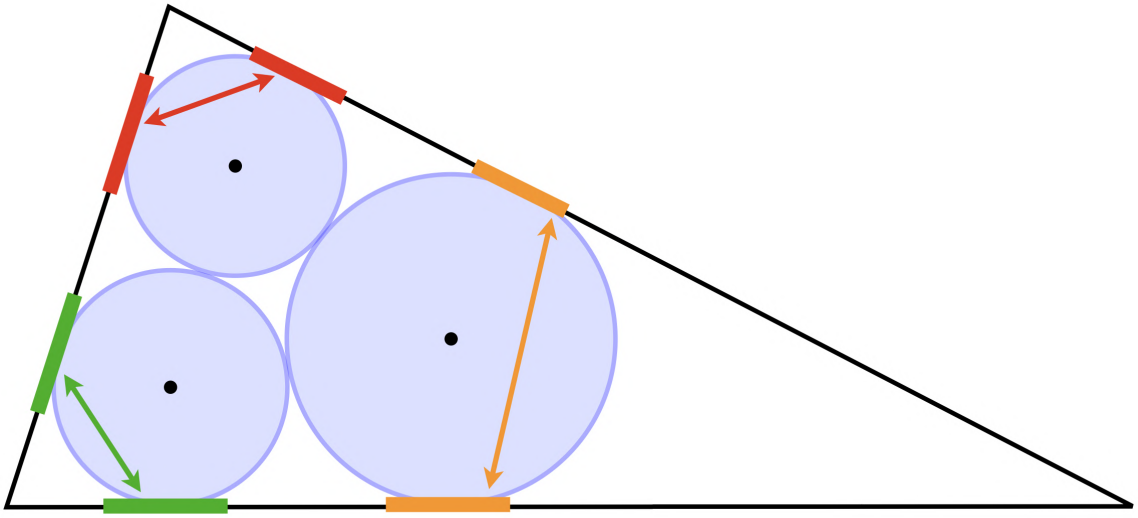


There's a very simple problem that for 100 years, mathematicians just accepted as solved, and yet, no one seemed to question if that solution was really right. Turns out… it wasn't. And there's a version of it that still hasn't been solved to this day.

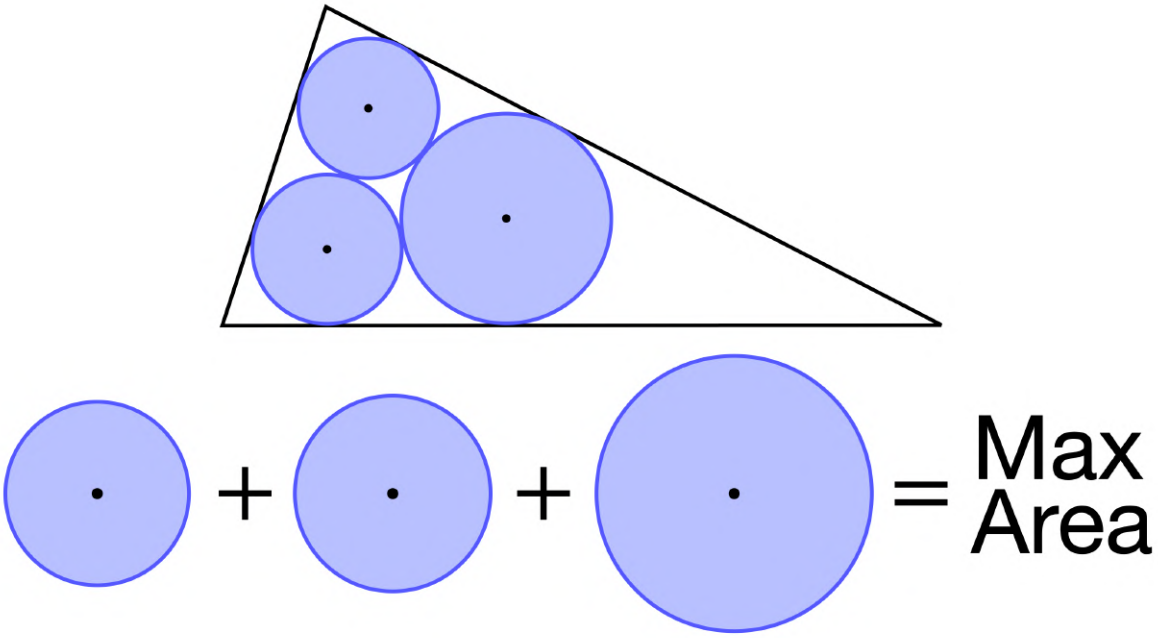


It is the problem of **Malfatti circles**. Imagine 3 non-overlapping circles

inside a triangle, each of which has to touch its neighbors, and each of which has to touch two sides of the triangle.



It was believed that any 3 such circles, inscribed within a triangle, would together *maximize the total area* of the 3 circles.



And intuitively, they do look optimal. But… they're not. And the worst part? The proof that they aren't is not even that complicated.

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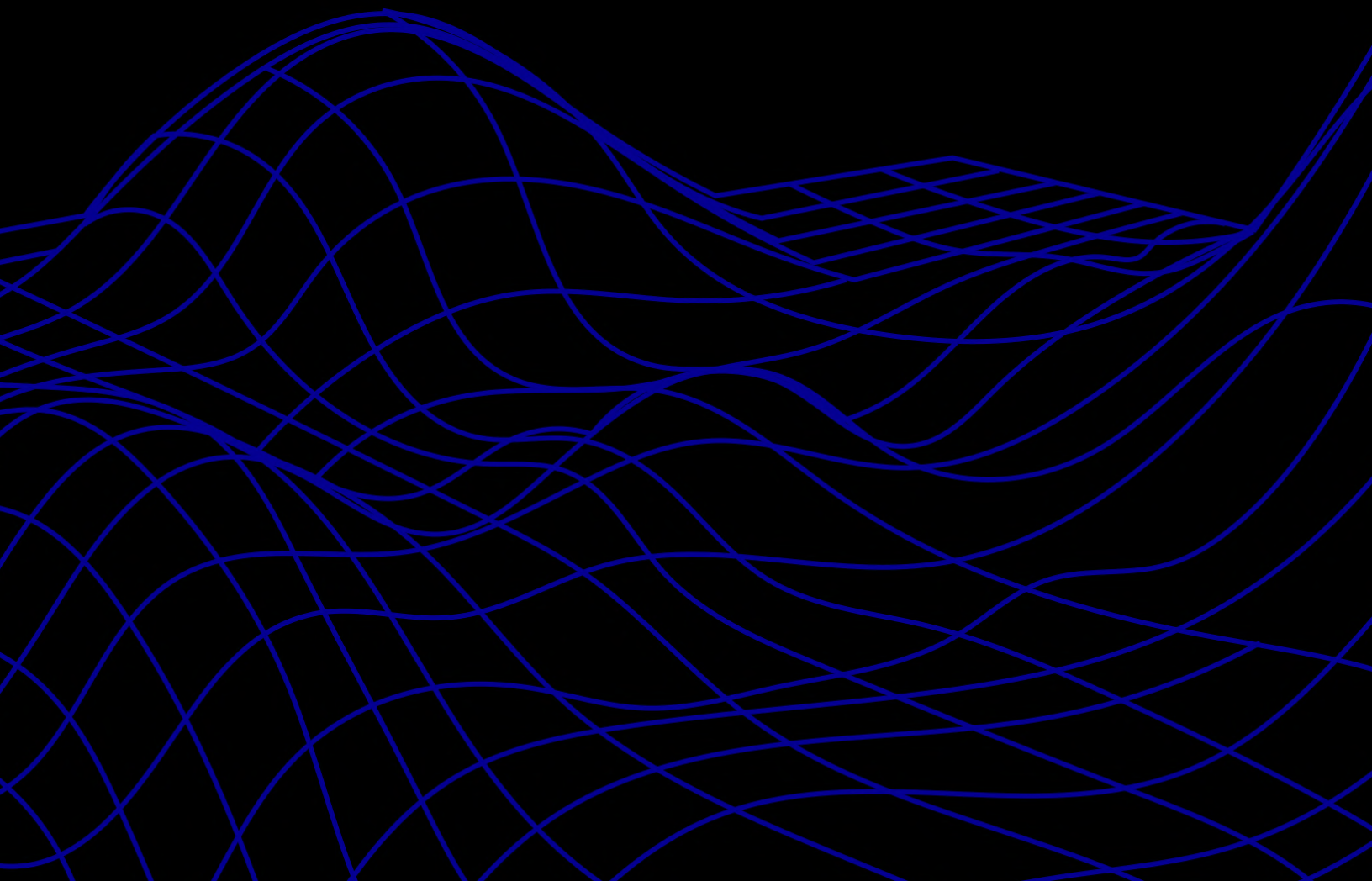
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