

MITOCW | 6. How did you pursue your interest in mathematics while in middle and high school?

PROFESSOR: You know, to be honest, for the most part, I did what I had to do, went through the standard process-- generally, I was-- it didn't take me long to do that-- until I finally ran into an eighth grade teacher who basically realized that I was pretty bored by the standard problems in the class and was able to get through it without much trouble, and he gave me the opportunity to do some work on my own, and gave me problems to work on my own that were not in the textbook and were very unlike anything I've ever seen. And then he convinced me to-- at that time, there weren't all these contests that I mentioned, but there was one in Colorado. And he convinced me to try and take it.

And, you know, I thought I was pretty smart, as a lot of young teenagers do, and took the test. And most of the tests, I found easy, but there were a few problems on there that stunned me because they seemed like totally simple trivial problems. But I had no idea how to solve them. I didn't even know how to start even thinking about the problem, and that actually both, you know, sort of annoyed me, but it also intrigued me that there were problems out there that clearly people expected you to be able to figure out. But I no idea how to do it.

And I can actually even remember the problem that stumped me. I ended up spending a good chunk of the test just trying to figure this problem out and of course did very, very poorly as a result. But I couldn't let go of it.

It was you have a child's toy that's made up of cubes, and each of these cubes is painted with six different colors. Each side is a different color-- same six colors are used for all the cubes. And the question was simply, how many-- and all the cubes are different, so no-- you pick up two cubes. You can't rotate one to make it the same as another one. And the question was how many cubes are there?

And I thought about it, and I thought about it, and I thought about it. And I couldn't come up with a good answer in the course of the test, but that's one of the questions we answer in the course. And now I can give you a very simple answer.