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Mesa Community College Professors' Study Of Japanese Calculation Tablets Reveal Mathematical Mystery

By [Tom Maxedon](#)

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(Image courtesy of Princeton University Press/Asahi Shinbun)

The tablet, hung in Fukushima prefecture in 1885, measures 5.6 by 2.4 feet and includes a problem involving a folding fan, a popular item in the 19th century. This wooden sangaku — literally “calculation tablet” — is from one of approximately 900.

Hoping to provide historical links to the study of mathematics, two Mesa Community College professors recently published an article on wooden Japanese calculation tablets that represent a mathematical mystery.

Known in Japanese as "sangaku," the tablets were created during the Edo period when Japan isolated itself from the world.

According to David Schultz, professor of mathematics and computer science at Mesa Community College, despite being closed off to branches of math like calculus, created by western mathematicians in the 17th century, the tablets from the Edo period "had calculus-type problems on them, but they never had any solutions. They did have the answers written down and the answers were not the easiest in the world."

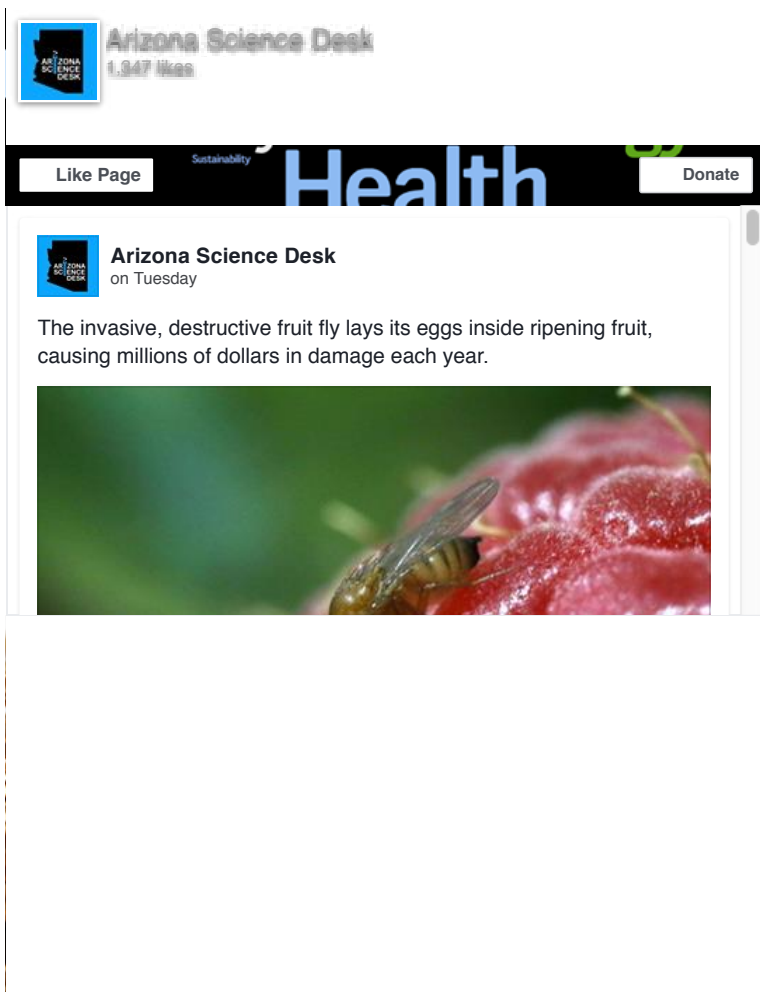
Schultz and his colleague, Enrico Serpone, co-authored a recent [article](#) about the tablets, entitled "Sangaku Optimization Problems." He said the tablets present an interesting question since many of them do not show how answers to math problems were derived.

"How did they come up with these solutions to these problems that are typically solved with calculus?"

Schultz said the tablets were left at Shinto shrines and Buddhist temples as offerings which is how we know about them. He was inspired by the work of Fukagawa Hidetoshi, the world's foremost author on the topic of sangaku, often referred to as temple geometry.

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