

# The manuscript of *Yang Hui Suanfa* by Seki Takakazu in 1661

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The *Yang Hui Suanfa* is one of the most important mathematical arts in pre-modern age (from the 13<sup>th</sup> century to the 19<sup>th</sup> century) in Eastern Asia. Because the *Yang Hui Suanfa* had new direction of the mathematics in Eastern Asia, that is to say, speedy calculations for commercial trade, therefore it became the textbook in the Yi dynasty (1392-1910) in Korea.

Japanese mathematicians also studied the *Yang Hui Suanfa* and magic squares, indeterminate equations, and the solving method of higher degree equations although the *Yang Hui Suanfa* did not describe the established method of higher degree equations, that is, the Tianyuan-shu method.

Seki Takakazu (1645?-1708) also studied the *Yang Hui Suanfa* during his boyhood and hand-copied it in 1661 probably by the wood printed version in Korea. The best version of *Yang Hui Suanfa* is the wood printed version in Korea and eight books of *Yang Hui Suanfa* are kept in Japan, Taiwan and Korea. But the Korean version has some mistakes, and Seki Takakazu corrected them. Some opinions said that there were corrected versions in the 17<sup>th</sup> century.

We had the wood printed version and the manuscript of *Yang Hui Suanfa* at the Yonsei University, Korea. We also found that the corrected points are not the same as Teki Takakazu's ones. Therefore, we can conclude that the 16 year-old Seki Takakazu corrected mistakes by his own mathematical ability.

Seki studied the *Yang Hui Suanfa*, then he was appointed to Samurai position.

**Key Words:** the *Yang Hui Suanfa*, Seki Takakazu, the Yi dynasty, Yonsei University.