



Geometry of the Icosikaidigon in Orvieto Cathedral

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Abstract The rose window on the main façade of Orvieto cathedral is unique because its design is based on a 22-sided polygon. It is well known that the icosikaidigon cannot be constructed using only a compass and a straightedge. Therefore, using a geometric/statistical approach, we intend to unveil which approximate construction method was used by the sculptor to draw this unique rose window.

Keywords Rose window · Icosikaidigon · Orvieto cathedral · Classic Geometry

Introduction

The rose window on the main façade of Orvieto cathedral was designed by the sculptor Andrea di Cione (c. 1308–1368), who made significant changes to the initial proposal by Lorenzo Maitini (c. 1275–1330) in 1310. Andrea di Cione, also

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