

## Wisdom in Art: Mathematics in Islamic Architecture in Iran

Hourieh Mashayekh  
906-257 Lisgar St. Ottawa  
ON., CANADA, K2P0C7  
Email: [houril197@yahoo.com](mailto:houril197@yahoo.com)

“This high dome is simple, yet complexly designed,  
No sage never knows, secrets behind the gate,”- Hafiz (14<sup>th</sup> century)

Architecture, through the ages, has embraced a wide variety of arts and sciences .By using mathematics, Islamic architecture has achieved a high level of beauty and perfection. Islamic Iranian architecture, especially in the Middle Ages (10-14 century) is an astonishing and glorious instance of this endeavor of applying mathematics to architecture

The geometry is used in all kinds of designs; it means that this geometry has not only solved structural problems but also has been used in detailed designs. These designs range from very high and immense entrances of Friday mosques in important cities, to entrances of ordinary houses where the architecture has been concealed inside the house from the passengers out side, and to the axis of building that crosses each other with desirable angles responding to the architecture demands.

By reviewing the multiple examples of Islamic Iranian architecture, we realize its close relationship with scientific field such as mathematics, geometry, cosmology, astrology. We can see how this relationship made possible an achievement of perfection, magnification and poetic beauty. It is wisdom within art.

Medieval Islamic architecture of Iran, specially the period between Seljuk and Timur presents usage of advanced mathematics in tall towers, tall entrances and two shelled domes in the mosques of different cities

Among the immense number of examples of the usage of mathematics in Islamic Iranian architecture, I would like to review one example which is worth researching completely in the future. This example is the entrance of the Friday mosque at Yazd. The Friday mosque is a notable building both visually and structurally. Facing this unique tall entrance, tallest entrance in Islamic architecture of Iran, makes the viewer think of heaven. This sense could only be projected by narrowing the entrance as much as possible and by making it as tall as possible with the help of mathematical calculations.