

The catapult that Archimedes built, the gambling-houses that Descartes frequented in his dissolute youth, the field where Galois fought his duel, the bridge where Hamilton carved quaternions—not all of these monuments to mathematical history survive today, but the mathematician on vacation can still find many reminders of our subject's glorious and inglorious past: statues, plaques, graves, the café where the famous conjecture was made, the desk where the

famous initials are scratched, birthplaces, houses, memorials. Does your hometown have a mathematical tourist attraction? Have you encountered a mathematical sight on your travels? If so, we invite you to submit to this column a picture, a description of its mathematical significance, and either a map or directions so that others may follow in your tracks. Please send all submissions to the European Editor, Ian Stewart.

The Left-Handed Pythagoras

Catriona Byrne

The dedicated mathematical tourist in northern France will have few problems locating this relief of Pythagoras, dating from the twelfth century, among the nearly 1800 sculpted figures of the cathedral of Notre Dame de Chartres.

The town is dominated by its cathedral, rising between the narrow streets of the old quarter, close to the river Eure. Pythagoras sits at the foot of the arch above the right-hand door of the magnificent West (Main) Portal. This arch depicts the Greek philosophers and their attributes. For his discovery that intervals in music may be expressed mathematically, Pythagoras is associated with music as well as geometry.

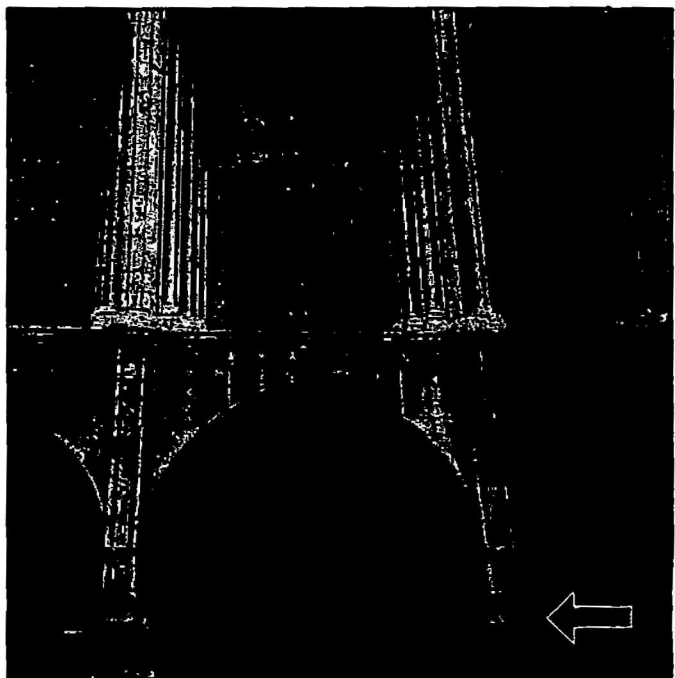
Chartres is a masterpiece of the ingenious system of proportions underlying medieval architecture. For medieval Europeans, God was the Great Geometer; this concept inspired the architect. Chartres was a reputed center of philosophical study, devoted particularly to Plato's book *Timaeus*, which held that the whole universe expresses "measurable harmony." Thus the geometric properties of the cathedral's architecture were probably well understood and planned.

Appropriately, the town lies in the middle of a "plane," and you can see the spires from literally miles and miles away—it really gives you a gut feeling for what it means to say that a manifold is locally flat. There is a famous pilgrimage from Paris to Chartres every year at Easter: hundreds of people walk the 96 kilometers, and of course long before they get there,

they have the illusion that they have arrived, because they can see the cathedral. It must be maddening.

Note that Pythagoras is depicted as left-handed. Apparently, the proportion of left-handed mathematicians is distinctly higher than the proportion of left-handed people in a random population.

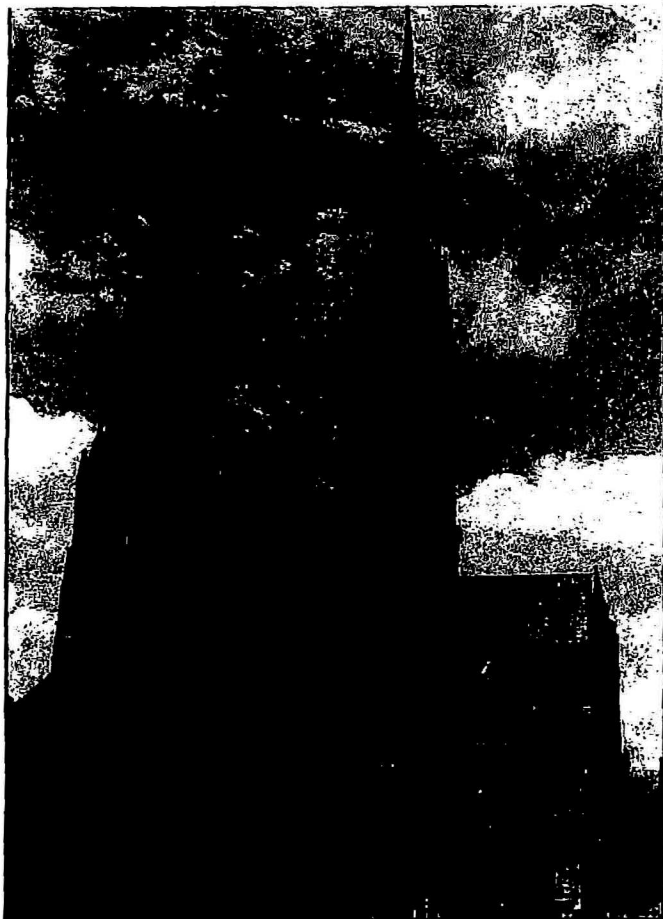
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Arrow indicates location of Pythagoras on the right portal.

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Cathedral of Notre Dame de Chartres.



The left-handed Pythagoras.

The Fall of Pythagoras

Jonathan Holden

Once all his calculations came out like peas. You could pop them whole from the pod, perfect spheres. And they were sweet. The number two tasted the way deep fields taste after rain. You could take the trees apart, find godlike shapes if you didn't look too hard, which is why I feel sorry for Pythagoras. He tried to take a pure square apart, he was tinkering around too much. One hard look at the diagonal, and it was too late. The quality of light had already changed. It lent the wind forbidden possibilities, the clouds this odd, this brooding weight; for the diagonal was the square root of Two. And what Two was made of—this hard, sweet pea—what all these leaves, these animals and clouds, the sun, even these ugly dreams he'd been having recently at night were made of, would not add up. The harder you tried to add them up, the finer they became, the faster sifted through your fingers the incommensurable parts of everything.

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