

# CE 311K: Taylor series

Krishna Kumar

University of Texas at Austin

krishnak@utexas.edu

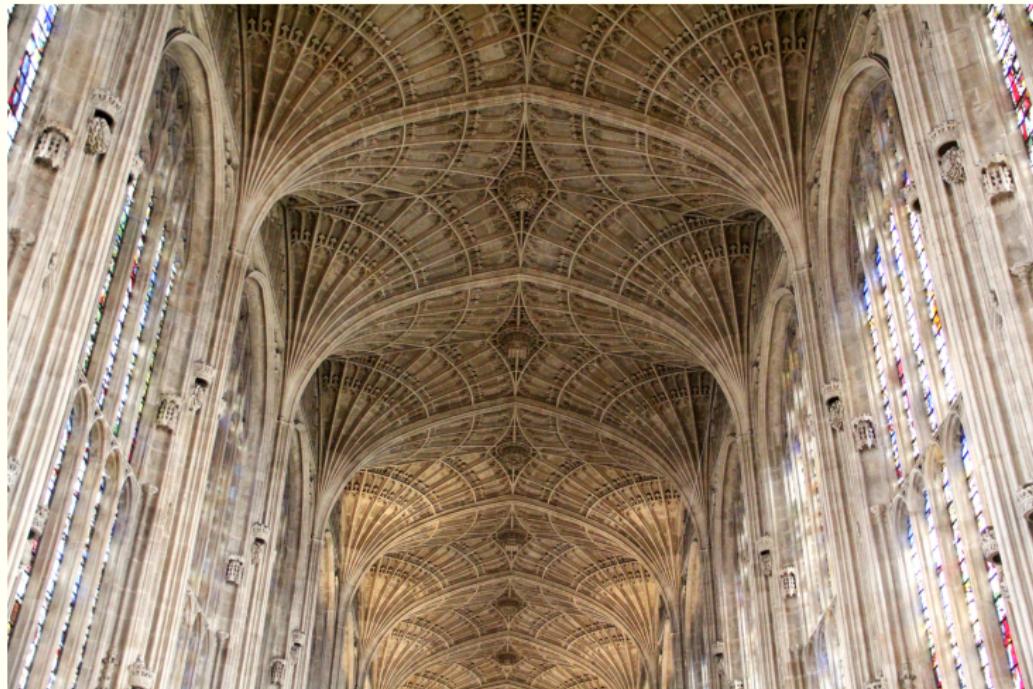
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## 1 Catenary vs Parabola

# The fan vaults of King's college



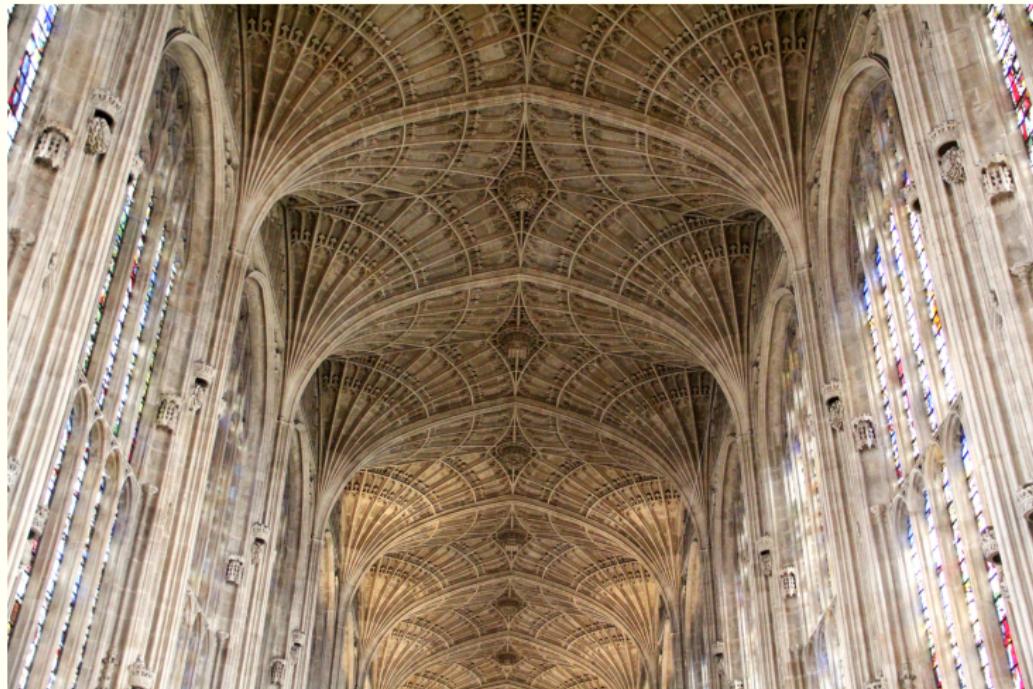
② What is the thickness of the ceiling?



# From arches to fan vaults



# The fan vaults of King's college



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- └ Catenary vs Parabola

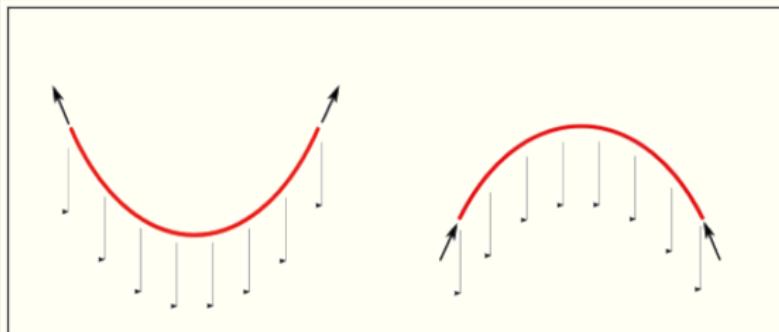
- └ The fan vaults of King's college

The fan vaults of King's college



King's college fan vaults were built in 1441

# Catenary

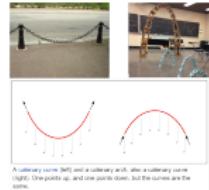


A [catenary curve](#) (left) and a catenary arch, also a catenary curve (right). One points up, and one points down, but the curves are the same.

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## └ Catenary vs Parabola

### └ Catenary



The English architect Robert Hooke was the first to study the catenary mathematically and in 1675 published an anagram (in Latin) of : "As hangs the flexible line, so but inverted will stand the rigid arch." The arch above Wembley Stadium has the shape of a catenary and Christopher Wren also intended to use it in St. Paul's dome

# Catenary, catenary . . . everywhere



# Sagrada Familia



catenary design



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## └ Catenary vs Parabola

### └ Sagrada Familia



Antoni Gaudi i Cornet (1852-1926) was a well-known architect from Spain. Gaudi used catenary arches in many of his projects. One of Gaudi's greatest works however became the Temple of the Holy Family (the Sagrada Familia) in Barcelona.

② What is this shape?



# Catenary vs Parabola

