

The Interesting Shape

History and provenance

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Torricelli's trumpet, or Gabriel's horn

The standard example is associated with Evangelista Torricelli. Andrew Boyd's University of Houston historical essay dates Torricelli's discovery of an infinitely long solid with finite volume to 1641 and discusses the reactions it provoked [1]. The essay points to Paolo Mancosu and Ezio Vailati's 1991 historical study in *Isis*.

The shape is now commonly called *Torricelli's trumpet* or *Gabriel's horn*. Modern calculus courses use it to contrast finite volume with infinite surface area.

Scope of this attribution

The attribution concerns this particular mathematical solid, not every shape that could answer the page's open-ended question. The accompanying solution gives one example and does not claim uniqueness.

Stories about filling a horn with paint versus coating its surface are memorable, but physical paint thickness and a mathematical surface are different notions. The solution states the volume and surface-area claims directly instead of relying on a physical-paint analogy.

Sources

[1] Andrew Boyd, Torricelli's Trumpet, The Engines of Our Ingenuity, episode 2856, University of Houston (January 24, 2013).

<https://engines.egr.uh.edu/episode/2856>

Sources checked September 7, 2026. A documented appearance is not necessarily the earliest appearance.