

Cornell (No

Cavalieri's Principle in Volume Calculation

Today's Standard

HSG.GMD.A2 - (+) Give an informal argument using Cavalieri's principle for the formulas for the volume of a sphere and other solid figures.

Cues	Notes
Cavalieri's Principle	Cavalieri's Principle: A method for determining the volume of a solid by comparing cross-sectional areas.
Volume of a Sphere	Volume of a Sphere: Derived using Cavalieri's principle by comparing it to
Solid Figures	a cylinder.
Cross-Sectional Areas	Solid Figures: Includes spheres, cylinders, prisms, etc.
Real-World Applications	Cross-Sectional Areas: Key to applying Cavalieri's principle; must be equal at every level.
	Real-World Applications: Used in engineering, architecture, medical imaging, and more.

Summary

Cavalieri's principle helps determine the volume of various solid figures by comparing their cross-sectional areas at every level. This principle is essential for understanding and deriving volume formulas for complex shapes and has many real-world applications.