

Chapter 11

Circumference, Area, and Volume

11.1 Circumference and Arc Length

11.2 Areas of Circles and Sectors

11.3 Areas of Polygons

11.4 Three-Dimensional Figures

11.5 Volumes of Prisms and Cylinders

11.6 Volumes of Pyramids

11.7 Surface Areas and Volumes of Cones

11.8 Surface Areas and Volumes of Spheres



11.6 Volumes of Pyramids

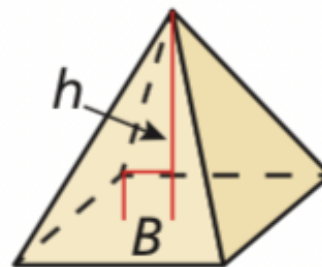
Volume of a Pyramid

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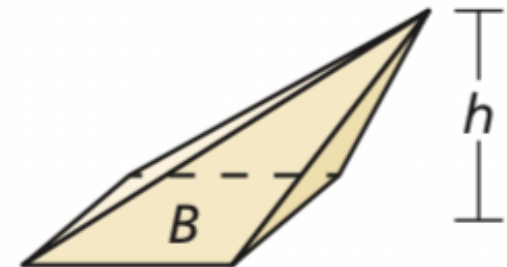
$$V = \frac{1}{3} Bh$$

Regular and oblique pyramids have the same height and the same cross-sectional area at every level, then Cavalieri's Principle says they have the same volume.

Regular Pyramid



Oblique Pyramid



$$V_{Right} = V_{Oblique}$$

11.6 Volumes of Pyramids

Volume of a Pyramid

Example

Khafre's Pyramid had a height of about 144 meters and a volume of about 2,218,800 cubic meters. Find the side length of the square base.



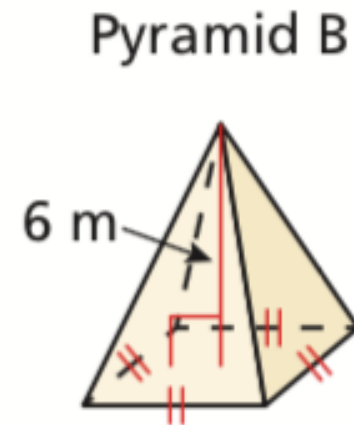
11.6 Volumes of Pyramids

Similar Solids

Example

Pyramids A and B are similar.

- a) What is the scale factor?
- b) What is the volume of pyramid B?



11.6 Volumes of Pyramids

Volume of Composite Solid

Example

Compute the volume of the composite figure.

