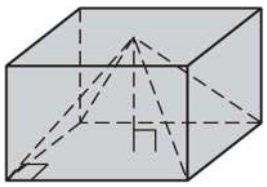
NAME _____ DATE _____ PERIOD _____

Mrs. Shaffer **Geometry** **Third Hour** **April 20 - 26**

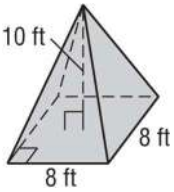
12-5 Volumes of Pyramids and Cones

Volumes of Pyramids This figure shows a prism and a pyramid that have the same base and the same height. It is clear that the volume of the pyramid is less than the volume of the prism. More specifically, the volume of the pyramid is one-third of the volume of the prism.



Volume of a Pyramid	If a pyramid has a volume of V cubic units, a height of h units, and a base with an area of B square units, then $V = \frac{1}{3}Bh$.

Example: Find the volume of the square pyramid.



$V = \frac{1}{3}Bh$ Volume of a pyramid

$= \frac{1}{3}(8)(8)10$ $B = (8)(8)$, $h = 10$

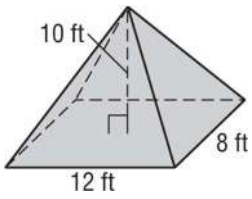
≈ 213.3 Multiply.

The volume is about 213.3 cubic feet.

Exercises

Find the volume of each pyramid. Round to the nearest tenth if necessary.

1.



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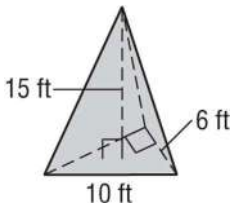

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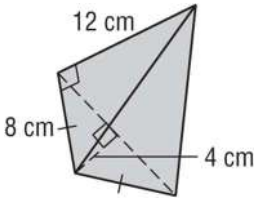

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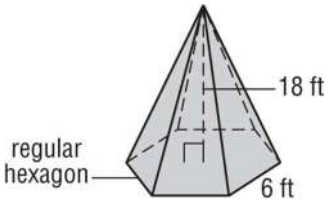

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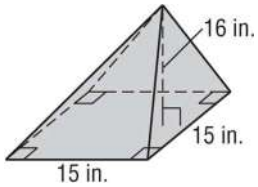

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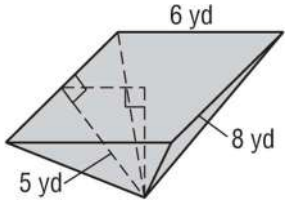

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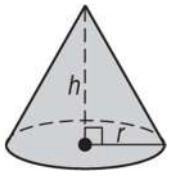
Volumes of Cones For a cone, the volume is one-third the product of the height and the area of the base. The base of a cone is a circle, so the area of the base is πr^2.



Volume of a Cone	If a cone has a volume of V cubic units, a height of h units, and the bases have a radius of r units, then $V = \frac{1}{3}\pi r^2 h$.

Example: Find the volume of the cone.

$V = \frac{1}{3}\pi r^2 h$ Volume of a cone

$= \frac{1}{3}\pi(5)^2 12$ $r = 5$, $h = 12$

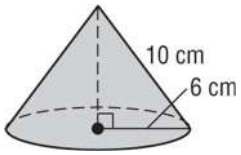
≈ 314.2 Simplify.

The volume of the cone is about 314.2 cubic centimeters.

Exercises

Find the volume of each cone. Round to the nearest tenth.

1.



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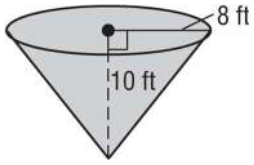

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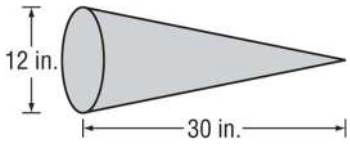

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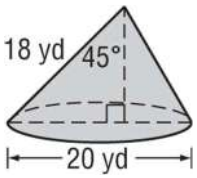

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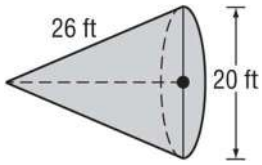

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