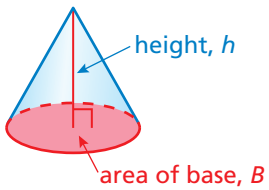
REVIEW: Volumes of Cones

Name _____

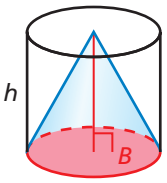
Key Concept and Vocabulary



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

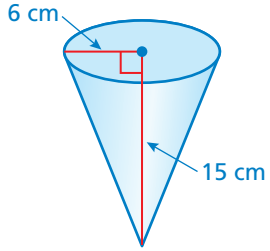
Visual Model

The volume of a cone is *one-third* the volume of the cylinder that has the same base and height.



Skill Example

1.



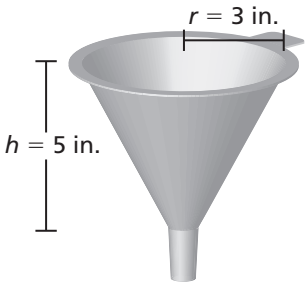
$$V = \frac{1}{3}Bh$$
$$= \frac{1}{3} \cdot (\pi \cdot 6^2) \cdot 15$$
$$= 180\pi \text{ cm}^3$$

Application Example

2. How much water can the funnel hold?

$$V = \frac{1}{3} \cdot (\pi \cdot 3^2) \cdot 5$$
$$= 15\pi$$

∴ It can hold 15π cubic inches.



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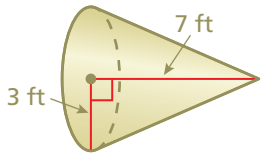
Check your answers at BigIdeasMath.com.

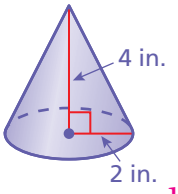
Find the volume of the cone.

3.



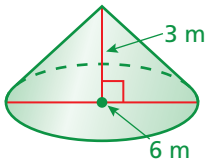
$V =$ $21\pi \text{ ft}^3$

4.



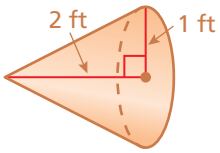
$V =$ $5\frac{1}{3}\pi \text{ in.}^3$

5.



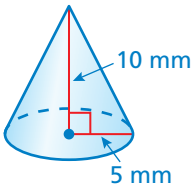
$V =$ $9\pi \text{ m}^3$

6.



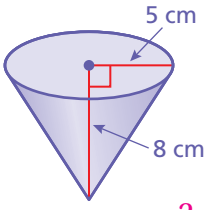
$V =$ $\frac{2}{3}\pi \text{ ft}^3$

7.



$V =$ $83\frac{1}{3}\pi \text{ mm}^3$

8.



$V =$ $66\frac{2}{3}\pi \text{ cm}^3$

9. LEMONADE You have 10 gallons of lemonade (1 gal ≈ 3785 cm^3). How many of the paper cups should you order? Explain. at least 206 paper cups; One paper cup holds $\frac{1}{3} \cdot 3.14 \cdot 4^2 \cdot 11 \approx 184 \text{ cm}^3$. You need $3785 \cdot 10 \div 184 \approx 206$ paper cups.