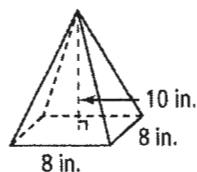


11.5 – Volume of Pyramids and Cones

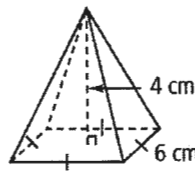
Find the volume of each square pyramid. Round to the nearest tenth if necessary. Round to the nearest 0.1 if necessary.

1)



$$213.3 \text{ in}^3$$

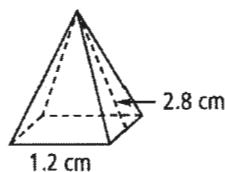
2)



$$48 \text{ cm}^3$$

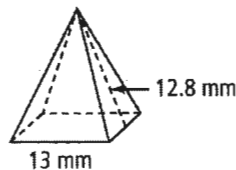
Find the volume of each square pyramid, given its slant height. Round to the nearest tenth.

3)



$$1.2 \text{ cm}^3$$

4)



$$621.2 \text{ mm}^3$$

- 5) The base of a pyramid is a square, 4.5 cm on a side. The height is 5 cm. Find the volume.

$$33.75 \text{ cm}^3$$

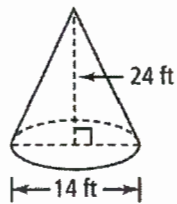
$$\approx 33.8 \text{ cm}^3$$

- 6) The base of a pyramid is a square, 3.2 cm on a side. The height is 10 cm. Find the volume to the nearest tenth.

$$34.1 \text{ cm}^3$$

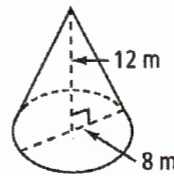
Find the volume of each cone in terms of π . Round to the nearest tenth

7)



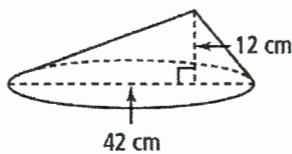
$$392\pi \text{ ft}^3$$

8)



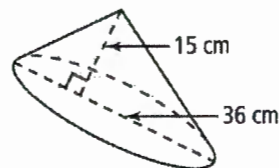
$$64\pi \text{ m}^3$$

9)



$$\begin{aligned} V &= \frac{1}{3}BH \\ &= \frac{1}{3}\pi r^2 H \\ &= \frac{1}{3} \times \pi \times 42^2 \times 12 \\ &= 1764\pi \text{ cm}^3 \end{aligned}$$

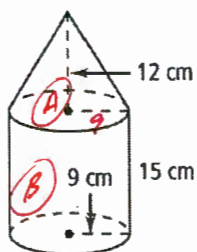
10)



$$\begin{aligned} V &= \frac{1}{3}BH \\ &= \frac{1}{3}\pi r^2 H \\ &= \frac{1}{3} \times \pi \times 36^2 \times 15 \\ &= 1620\pi \text{ cm}^3 \end{aligned}$$

Find the volume of each composite figure to the nearest whole tenth.

11)

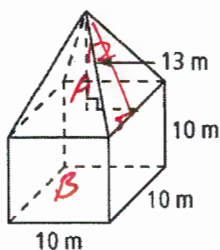


$$\begin{aligned} \textcircled{A} &= \frac{1}{3}\pi r^2 H \\ &= \frac{1}{3} \times 3.14 \times 9^2 \times 12 \\ &\approx 1017.36 \end{aligned}$$

$$\begin{aligned} \textcircled{B} &= \pi r^2 H \\ &= 3.14 \times 9^2 \times 15 \\ &\approx 3815.1 \end{aligned}$$

$$1017.36 + 3815.1 = 4832.46 \approx 4832.5 \text{ cm}^3$$

12)

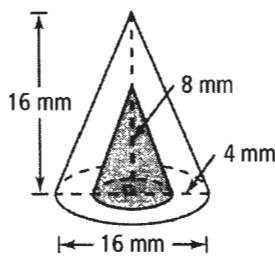


$$\begin{aligned} \textcircled{A} &= \frac{1}{3}BH \\ &= \frac{1}{3} \times 10 \times 10 \times 13 \\ &\approx 433.3 \end{aligned}$$

$$\begin{aligned} \textcircled{B} &= BH \\ &= 10 \times 10 \times 10 \\ &= 1000 \end{aligned}$$

$$433.3 + 1000 = 1433.3 \text{ m}^3$$

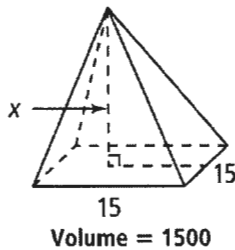
- 13) Find the volume when the smaller cone is removed from the bigger cone.



$$\begin{aligned}
 V &= \text{Big Cone} - \text{Small Cone} \\
 &= \frac{1}{3} \times 3.14 \times 8^2 \times 16 - \frac{1}{3} \times 3.14 \times 4^2 \times 8 \\
 &\approx 1071.8 - 134.0 \\
 &\approx 937.8 \text{ mm}^3
 \end{aligned}$$

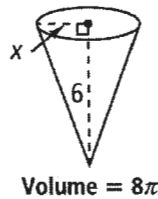
Find the value of x to the nearest tenth.

14)



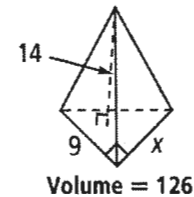
$$\begin{aligned}
 V &= \frac{1}{3} B H \\
 1500 &= \frac{1}{3} \times 15 \times 15 \times x \\
 4500 &= 225x \\
 \boxed{x &= 20}
 \end{aligned}$$

15)



$$\begin{aligned}
 V &= \frac{1}{3} \pi r^2 H \\
 8\pi &= \frac{1}{3} \times \pi \times 6^2 \times x \\
 8\pi &= 2\pi x^2 \\
 4 &= x^2 \\
 \boxed{x &= 2}
 \end{aligned}$$

16)



$$\begin{aligned}
 V &= \frac{1}{3} \left(\frac{1}{2} b h \right) H \\
 126 &= \frac{1}{3} \left(\frac{1}{2} \times 9 \times x \right) 14 \\
 9 &= \frac{7}{6} x \\
 \boxed{x &= 6}
 \end{aligned}$$

- 17) One right circular cone is set inside a larger right circular cone. The cones share the same axis, the same vertex, and the same height. Find the volume of the space between the cones if the diameter of the inside cone is 6 in., the diameter of the outside cone is 9 in., and the height of both is 5 in. Round to the nearest tenth.

$$58.9 \text{ in}^3$$