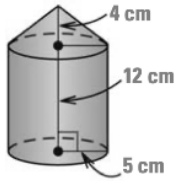


Find the Surface Area



Surface Area
Cone

$$S_{\text{Cone}} = \pi r^2 + \pi r l$$

$$l = 4^2 + 5^2$$

$$= 16 + 25$$

$$= \sqrt{41}$$

$$S_{\text{Cone}} = 5(\pi)(\sqrt{41})$$

$$= 100.58 -$$

$$S_{\text{Cyl}} = \pi r^2 + 2\pi r h$$

$$= \pi(5)^2 + 2\pi(5)(12)$$

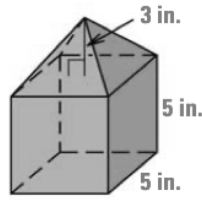
$$= 25\pi + 120\pi$$

$$= 145\pi$$

$$\approx 455.53 -$$

$$S_{\text{Cone}} + S_{\text{Cyl}} = 100.58 + 455.53$$

$$556.11 \text{ cm}^2$$



$$S_{\text{Pyr}} = \pi s + \frac{1}{2} P l$$

$$P = 20$$

$$l = (3)^2 + (2.5)^2$$

$$= 9 + 6.25$$

$$= \sqrt{15.25}$$

$$S_{\text{Pyr}} = \frac{1}{2} (20)(\sqrt{15.25})$$

$$= 39.05$$

$$S_{\text{Cube}} = \pi s + P H$$

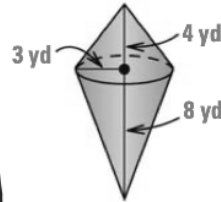
$$= 5^2 + (20)(5)$$

$$25 + 100$$

$$125$$

$$S = 39.05 + 125$$

$$164.05 \text{ in}^2$$



$$S_{\text{Cone}_{\text{top}}} = \pi r^2 + \pi r l$$

$$= \pi(3)(5)$$

$$= 15\pi$$

$$S_{\text{Cone}_{\text{bottom}}} = \pi r^2 + \pi r l$$

$$= \pi(5)(\sqrt{73})$$

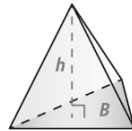
$$S = 15\pi + 3\pi\sqrt{73}$$

$$= 127.65 \text{ yd}^2$$

Volumes of Pyramids and Cones

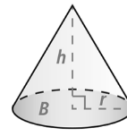
The volume of a pyramid is one-third the product of the area of the base and the height of the pyramid.

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

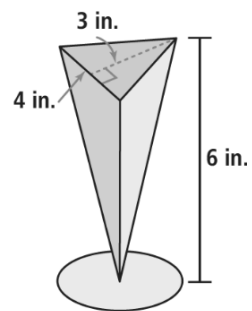


The volume of a cone is one-third the product of the area of the base and the height of the cone.

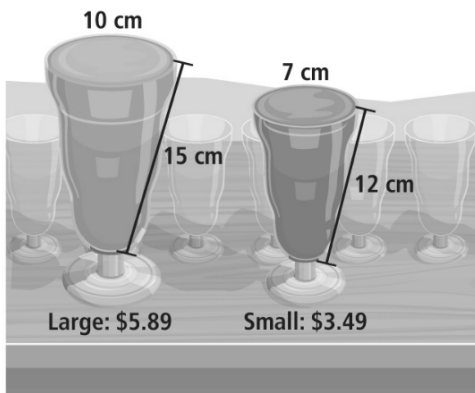
$$V = \frac{1}{3} Bh$$
$$V = \frac{1}{3} \pi r^2 h$$



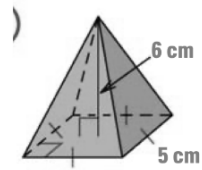
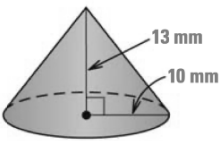
B. Jason is using the mold to make 12 candles. How many cubic inches of wax does he need?



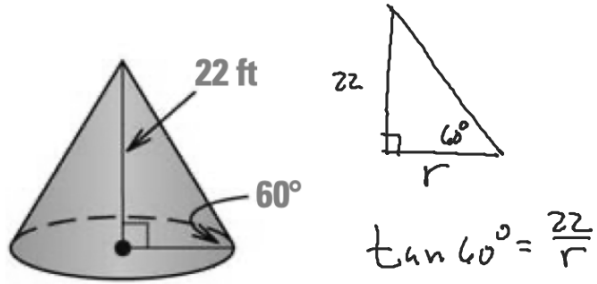
A restaurant sells smoothies in two sizes. Which size is a better deal?



Find the volume



Find the volume



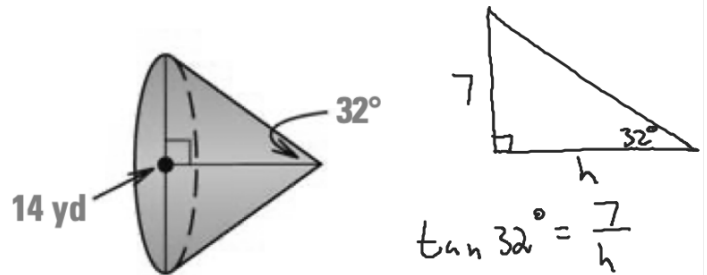
$$V = \frac{1}{3} \pi r^2 H$$

$$\frac{1}{3} \pi (12.7)^2 (22) \\ = 3715.84 \text{ ft}^3$$

$$\tan 60^\circ = \frac{22}{r}$$

$$r \tan 60^\circ = 22$$

$$r = \frac{22}{\tan 60^\circ} \\ = 12.70$$

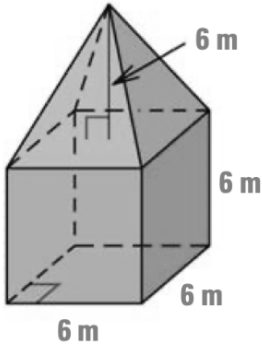


$$V = \frac{1}{3} \pi (7)^2 \left(\frac{7}{\tan 32^\circ} \right) \\ = 574.82 \text{ yd}^3$$

$$\tan 32^\circ = \frac{7}{h}$$

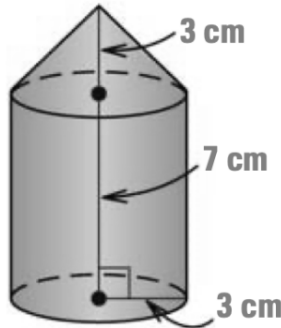
$$h = \frac{7}{\tan 32^\circ}$$

Find the volume



$$\begin{aligned}
 V_{\text{pyr}} &= \frac{1}{3} B H \\
 &= \frac{1}{3} (6)^2 (6) \\
 &= 72
 \end{aligned}$$

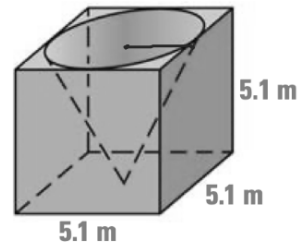
$$\begin{aligned}
 V &= B H \\
 &= (6)^2 (6) \\
 &= 216 \\
 &= 288 \text{ m}^3
 \end{aligned}$$



$$\begin{aligned}
 V_{\text{cone}} &= \frac{1}{3} B H \\
 &= \frac{1}{3} \pi r^2 H \\
 &= \frac{1}{3} \pi (3)^2 (3) \\
 &= 9\pi
 \end{aligned}$$

$$\begin{aligned}
 V_{\text{cy}} &= \pi r^2 H \\
 &= \pi (3)^2 (7) \\
 &= 63\pi
 \end{aligned}$$

$$V = 72\pi \text{ cm}^3$$



$$\begin{aligned}
 V_{\text{cube}} &= B H \\
 &= (5.1)^2 (5.1) \\
 &= 132.65
 \end{aligned}$$

$$\begin{aligned}
 V_{\text{cone}} &= \frac{1}{3} \pi r^2 H \\
 &= \frac{1}{3} \pi (2.55)^2 (5.1) \\
 &= 34.73
 \end{aligned}$$

$$\begin{aligned}
 V &= 132.65 - 34.73 \\
 &= 97.92 \text{ m}^3
 \end{aligned}$$