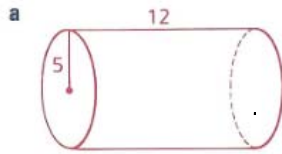


1.

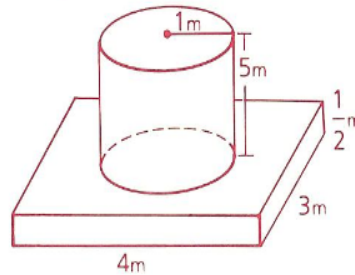
1 Find the volume of each solid.



$$\begin{aligned}
 V &= B \cdot h \\
 &= \pi r^2 \cdot h \\
 &= \pi 5^2 \cdot 12 \\
 &= 300\pi
 \end{aligned}$$

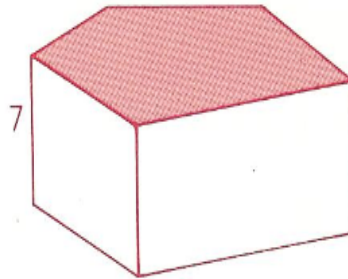
$$b. 90(8) = 720$$

2 Find the volume of cement needed to form the concrete pedestal shown. (Leave your answer in π form.)

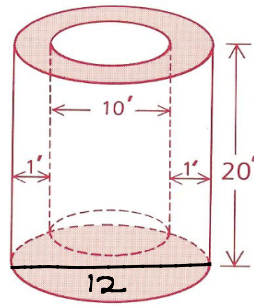


3 The area of the shaded face of the right pentagonal prism is 51. Find the prism's volume.

$$\begin{aligned}
 V &= B \cdot h \\
 (51) 7 &= 350 + 7 \\
 &= 357
 \end{aligned}$$



- 18 A cistern is to be built of cement. The walls and bottom will be 1 ft thick. The outer height will be 20 ft. The inner diameter will be 10 ft. To the nearest cubic foot, how much cement will be needed for the job?



$$V_{OUT} - V_{IN}$$

$$B_o h_o - B_I h_I$$

$$\pi R_o^2 \cdot h_o - \pi r_I^2 h_I$$

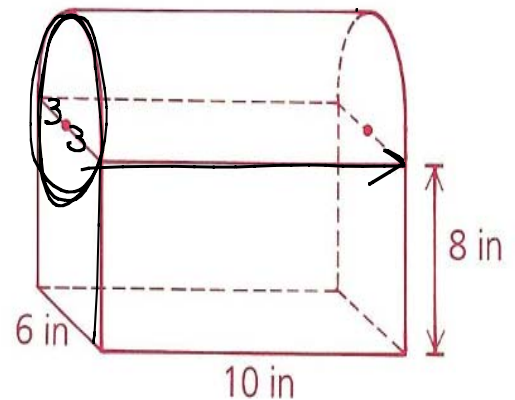
$$\pi 6^2 \cdot 20 - \pi 5^2 19$$

$$720\pi - 475\pi = 245\pi \text{ ft}^3 \text{ EXACT}$$

$$\approx 770 \text{ ft}^3 \text{ ESTIMATE}$$

- 17 Jim's lunch box is in the shape of a half cylinder on a rectangular box. To the nearest whole unit, what is

- The total volume it contains?
- The total area of the sheet metal needed to manufacture it?



$$a) V = \frac{1}{2} \text{ Cylinder} + \text{rect. prism}$$

$$\frac{1}{2} (\pi r^2) \cdot h + l \cdot w \cdot h$$

$$\frac{1}{2} (\pi 3^2) \cdot 10 + 6 \cdot 8 \cdot 10$$

$$45\pi + 480$$

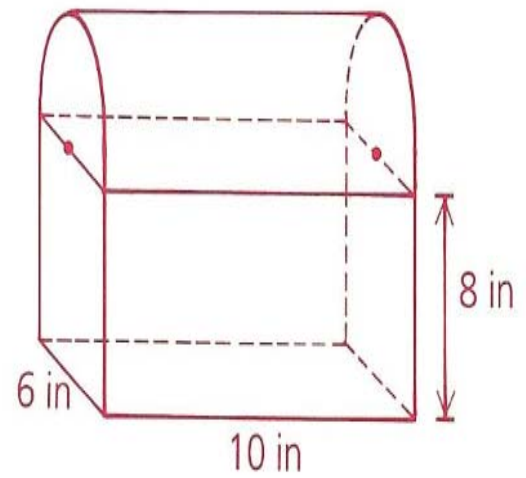
$$141.3 + 480$$

$$621 \text{ in}^3$$

Exact

17 Jim's lunch box is in the shape of a half cylinder on a rectangular box. To the nearest whole unit, what is

- The total volume it contains?
- The total area of the sheet metal needed to manufacture it?



P	BOTTOM :	60	T	$2 \cdot \frac{1}{2} \odot s = \pi 3^2 = 9\pi$
R	2 SIDES :	96	O	$+ \frac{1}{2} LA = r\pi h = \frac{30\pi}{2}$
I	2 FRONT :	<u>160</u>	P	<u>39π</u>
S		316		
M				

$$316 + 39\pi \approx 439 \text{ in}^2$$