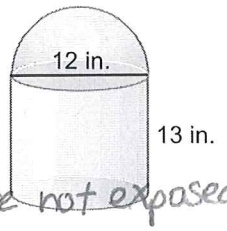


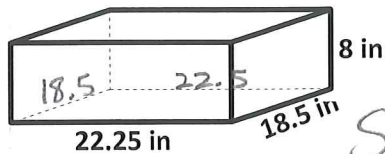
1. What is the difference between finding the volume and the surface area of the composite solid?

To find volume, you simply add the volumes of each together. However when finding surface area you must consider that the hemisphere base and a cylinder base are not exposed.



2. You would like to line the inside of a drawer with shelf liner, including the sides. There is no top to the drawer. How much shelf liner will you need to cover the inside surface? Round to the nearest tenth.

SA



$$B = (22.25)(18.5)$$

$$B = 411.625$$

$$LA = Ph$$

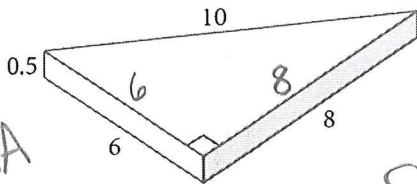
$$LA = (81.5)(8)$$

$$LA = 652$$

Shelf liner needed $\rightarrow LA + B = 652 + 411.6 = 1063.6$ in^2

3. You need to electroplate the following metal wedge with a thin layer of high-conducting silver. The measurements shown are in centimeters. How much silver will be needed? Round to the nearest tenth.

SA



$$B = \frac{1}{2}(6)(8) = 24$$

$$LA = Ph$$

$$LA = (24)(0.5)$$

$$LA = 12$$

Silver needed = $LA + 2B = 12 + 2(24) = 60$ cm^2

4. You would like to fill the can to the right with candy as a gift for Mother's Day. It is 11 cm deep and has a diameter of 8 cm.

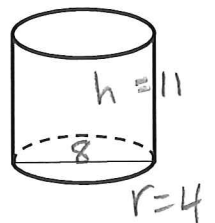
a) Before you give it as a gift, you'd like to cover the outside with colorful paper. *Do not include top*
How much paper will you need to cover the side and the bottom of the can? Round to the nearest tenth.

SA

$$SA = 2\pi rh + \pi r^2$$

$$SA = 2\pi(4)(11) + \pi(4)^2$$

$$SA = 276.5 + 50.3 = 326.8$$
 cm^2



b) What is the volume of candy that the container will hold? Round to the nearest tenth.

✓

$$V = \pi r^2 h$$

$$V = \pi(4)^2(11)$$

$$V = 552.9$$
 cm^3

5. How much sheet metal is required to make a cylindrical trash can with a diameter of 2 feet and height of 4.25 feet? Round to the nearest tenth. Do not include the top. Round to the nearest tenth.

SA

$$SA = 2\pi rh + \pi r^2$$

$$SA = 2\pi(1)(4.25) + \pi(1)^2$$

$$SA = 26.7 + 3.14 = 29.8$$
 ft^2

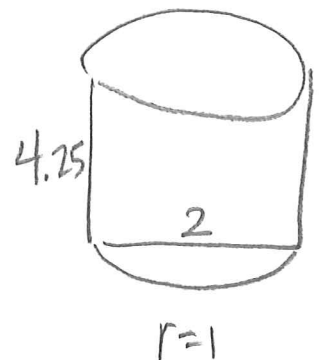
What is the volume of trash that the trash can will hold? Round to the nearest tenth.

✓

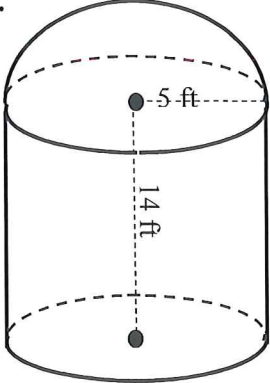
$$V = \pi r^2 h$$

$$V = \pi(1)^2(4.25)$$

$$V = 13.4$$
 ft^3



Find the total volume of the composite solids below. Round to the nearest tenth.

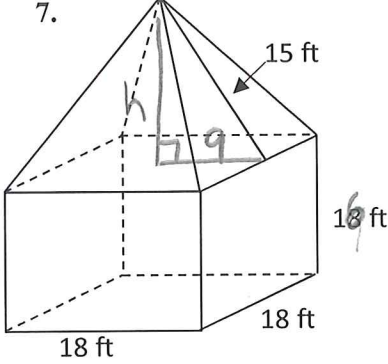
6. 

$$V_H = \frac{2\pi r^3}{3}$$

$$V_H = \frac{2\pi(5)^3}{3}$$

$$V_C = \pi r^2 h$$

$$V_C = \pi(5)^2(14)$$

7. 

$$V_{pyr.} = \frac{Bh}{3}$$

$$V = \frac{(324)(12)}{3}$$

$$V_{pri} = Bh$$

$$V = (324)(18)$$

$$9^2 + h^2 = 15^2$$

$$81 + h^2 = 225$$

$$\sqrt{h^2} = \sqrt{144}$$

$$h = 12$$

Volume of Hemisphere: 261.8 ft³

Volume of Cylinder: 1099.6 ft³

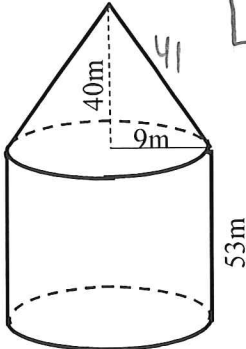
Total Volume: 1361.4 ft³

Volume of Pyramid: 1296 ft³

Volume of Prism: 5184 ft³

Total Volume: 6480 ft³

Find the total surface area of the composite solids below. Round to the nearest tenth.

8. 

$$LA_{co} = \pi r l$$

$$= \pi(9)(41)$$

$$LA_{cy} = 2\pi r h$$

$$= 2\pi(9)(53)$$

$$B_{cy} = \pi r^2$$

$$= \pi(9)^2$$

$$9^2 + 40^2 = l^2$$

$$81 + 1600 = l^2$$

$$\sqrt{1681} = \sqrt{l^2}$$

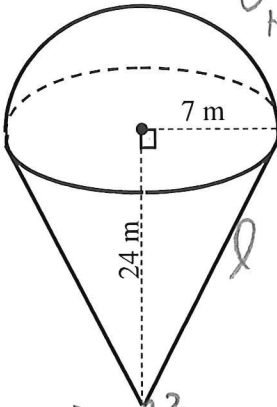
Slant Height: 41 m

Cone Lateral Area: 1159.2 m²

Cylinder Lateral Area: 2997.1 m²

Cylinder Base Area: 254.5 m²

Total Surface Area: 4410.8 m²

9. 

$$S_H = \frac{1}{2}(4\pi r^2)$$

$$S_H = 2\pi r^2$$

$$= 2\pi(7)^2$$

$$LA_c = \pi r l$$

$$= \pi(7)(25)$$

$$7^2 + 24^2 = l^2$$

$$49 + 576 = l^2$$

$$\sqrt{625} = \sqrt{l^2}$$

Slant Height: 25 m

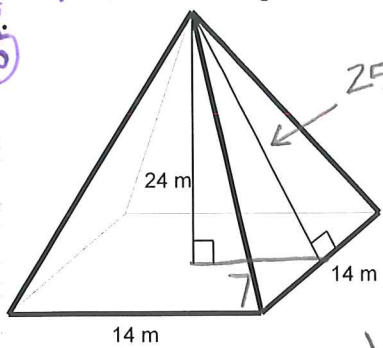
Hemisphere Surface Area: 307.9 m²

Cone Lateral Area: 549.8 m²

Total Surface Area: 857.7 m²

10-13
 For #8-11, find the required information. Round to the nearest tenth.

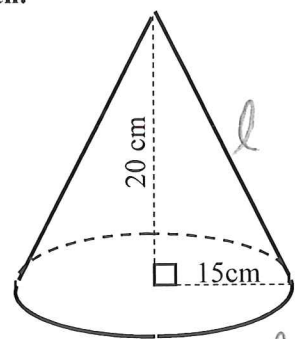
10



25 (see #7)
 $LA = \frac{Pl}{2}$
 $= \frac{56(25)}{2}$

$V = \frac{Bh}{3}$
 $V = \frac{(196)(24)}{3}$

11



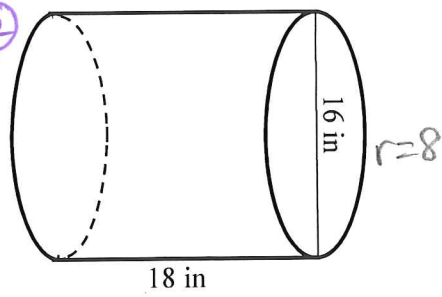
$15^2 + 20^2 = l^2$
 $225 + 400 = l^2$
 $\sqrt{625} = \sqrt{l^2}$

$LA = \pi r l$
 $= \pi (15)(25)$
 $B = \pi r^2$
 $= \pi (15)^2$
 $V = \frac{Bh}{3}$
 $V = \frac{(706.9)(20)}{3}$

- Slant Height: 25m
- Lateral Area: 700 m²
- Area of Base: 196 m²
- Surface Area: 896 m²
- Volume: 1568 m³

- Slant Height: 25cm
- Lateral Area: 1178.1 cm²
- Area of Base: 706.9 cm²
- Surface Area: 1885 cm²
- Volume: 4712.7 cm³

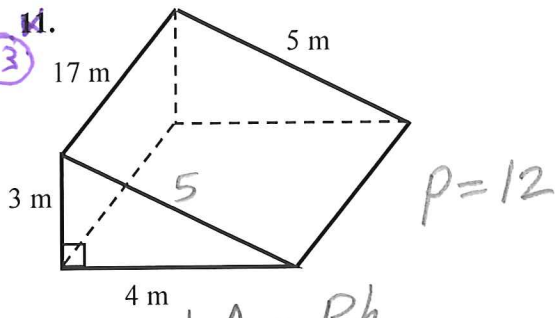
12



$LA = 2\pi r h$
 $= 2\pi(8)(18)$
 $B = \pi r^2$
 $= \pi(8)^2$
 $V = Bh$
 $= (201.1)(18)$
 $SA = LA + 2B$
 $904.8 + 2(201.1)$

- Lateral Area: 904.8 in²
- Area of Base: 201.1 in²
- Surface Area: 1307. in²
- Volume: 3619.8 in³

13

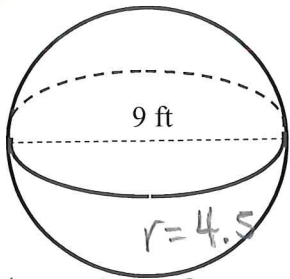


$LA = Ph$
 $= (12)(17)$
 $B = \frac{1}{2}bh$
 $= \frac{1}{2}(3)(4) = 6$
 $SA = LA + 2B = 204 + 2(6)$
 $V = Bh$
 $= (6)(17)$

- Lateral Area: 204 m²
- Area of Base: 6 m²
- Surface Area: 216 m²
- Volume: 102 m³

Find the surface area and volume each. Round to the nearest tenth.

12.
14



$$SA = 4\pi r^2$$

$$4(\pi)(4.5)^2$$

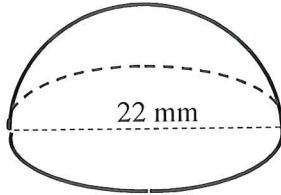
$$V = \frac{4\pi r^3}{3}$$

$$V = \frac{4\pi(4.5)^3}{3}$$

Surface Area: 254.5 ft²

Volume: 381.7 ft³

13.
15



$$r = 11$$

$$SA = 2(\pi r^2) + \pi r^2$$

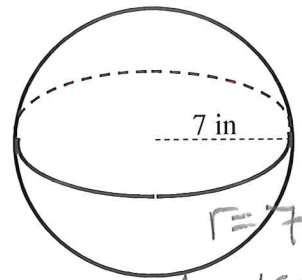
$$SA = 3\pi r^2 = 3\pi(11)^2$$

$$V = \frac{2\pi r^3}{3} = \frac{2\pi(11)^3}{3}$$

Surface Area: 1140.4 mm²

Volume: 2787.6 mm³

14.
16



$$r = 7$$

$$SA = 4(\pi)(7)^2$$

$$V = \frac{4\pi(7)^3}{3}$$

Surface Area: 615.8 in²

Volume: 1436.8 in³

15. Indicate whether the following are examples of surface area or volume. (Circle one)

17

Filling a test tube with a solution

S.A. / Volume

Covering a textbook with a book cover

S.A. / Volume

The amount of ice cream in a container

S.A. / Volume

Painting the outside of a shed

S.A. / Volume

Lining a drawer shelf with paper

S.A. / Volume

The amount of tile needed to tile a bathtub surround

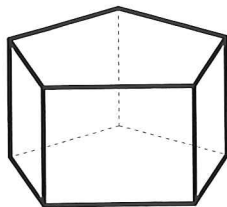
S.A. / Volume

The amount of candy that a piñata can hold

S.A. / Volume

For each geometric solid, identify the number of faces, edges, and vertices.

16.
18

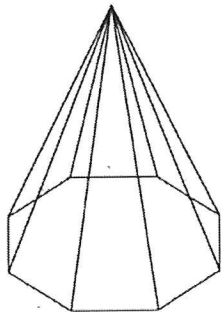


Faces: 7

Edges: 15

Vertices: 10

17.
19

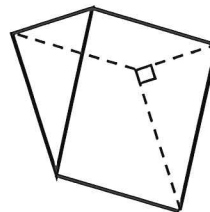


Faces: 5

Edges: 12

Vertices: 5

18.
20

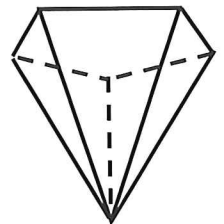


Faces: 6

Edges: 12

Vertices: 8

19.
21



Faces: 4

Edges: 6

Vertices: 4