

Surface Area

Cone $\pi r^2 + \pi rs$	Sphere $4\pi r^2$	Cylinder $2\pi r^2 + 2\pi rh$
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Volume

Cone $\frac{\pi r^2 h}{3}$	Sphere $\frac{4\pi r^3}{3}$	Pyramid $\frac{Ah}{3}$
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Surface Area and Volume Questions

1. A right square pyramid has a base length of 5 cm and a height 12 cm.

- a). What is the slant height of the pyramid to the nearest cm?
 $s = 12.3 \text{ cm}$
- b). What is the surface area of the pyramid to the nearest cm^2 ?
 $SA = 148 \text{ cm}^2$
- c). What is the volume of the pyramid to the nearest cubic cm?

$V = 100 \text{ cm}^3$

2. A right rectangular prism has a volume of 412.5 in^3 , what is the volume of a right rectangular pyramid with the same base and height?

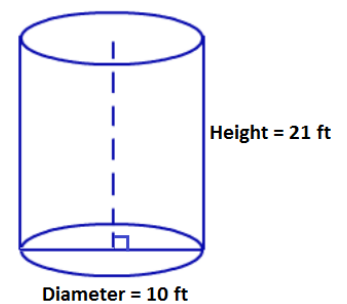
$V = 137.5 \text{ in}^3$

3. A cone has a volume of 1525 mm^3 and a base radius of 7 mm. What is its height to the nearest tenth of a millimeter?

$h = 29.7 \text{ mm}$

4. What is the surface area of the cylinder to the nearest square foot?

$SA = 816.4 \text{ ft}^2$



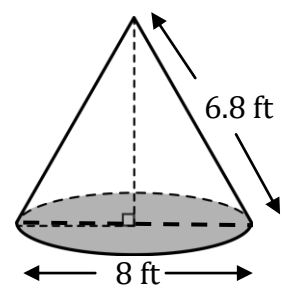
5. Refer to the cone given on the right.

- a). What is the lateral area of the cone to one decimal place?

$\pi rs = 85.4 \text{ ft}^2$

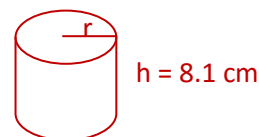
- b). What is the total surface area of the cone to one decimal place?

$SA = 135.6 \text{ ft}^2$



6. The volume of a cylinder is 978.18 cm^3 . If the height is 8.1 cm , what is the radius?
Draw and label a diagram.

$$r = 6.2 \text{ cm}$$



- 7a). A sphere has a radius of 25 cm . What is the surface area of the sphere to the nearest square centimetre?

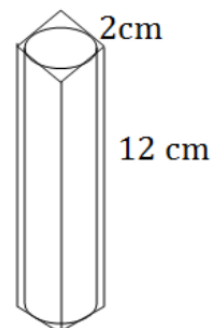
$$SA = 7850 \text{ cm}^2$$

- b). What is the surface area of a hemisphere with the same size radius?

$$SA = 5887.5 \text{ cm}^2$$

8. A closed cylindrical can is packed in a box. What is the volume of the empty space between the can and the box? Given the height is 12 cm and the square at the top of the box is 2 cm .

$$\text{Volume of empty space} = 10.32 \text{ cm}^3$$



- 9a. The surface area of a lacrosse ball is 20 in^2 . What is the diameter of the lacrosse ball to the nearest tenth of an inch?

$$\text{diameter} = 2.6 \text{ in}$$

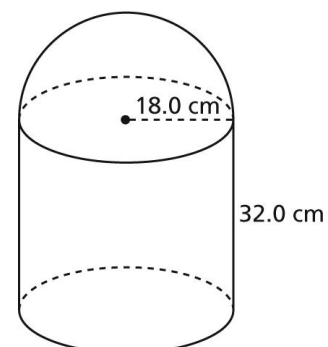
- b. What is the volume of a lacrosse ball to one decimal place?

$$V = 9.2 \text{ in}^3$$

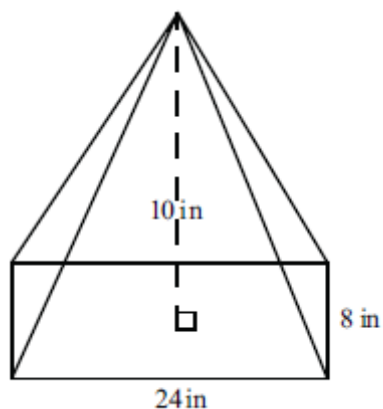
10. Determine the volume and surface area of this composite object. Give answers to two decimal places where necessary.

$$V = 44763.84 \text{ cm}^3$$

$$SA = 6669.36 \text{ cm}^2$$



11. What is the volume and surface area of the rectangular pyramid?



$$V = 640 \text{ in}^3$$

$$SA = 576 \text{ in}^2$$

12. A square pyramid has a volume of 12.6 ft^3 . What is the volume of a square prism with the same base and height?

$$V = 37.8 \text{ ft}^3$$