

Solids Practice

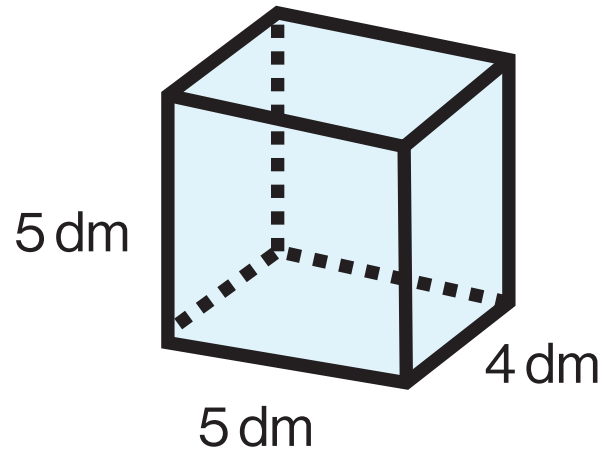
Name: _____

Date: _____

Question 1

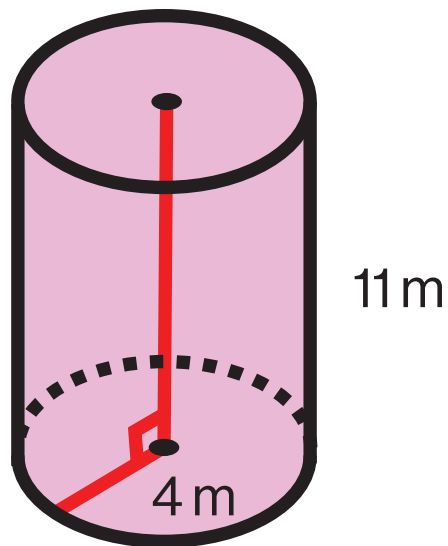
Determine the surface area of the solid

I.



SA:

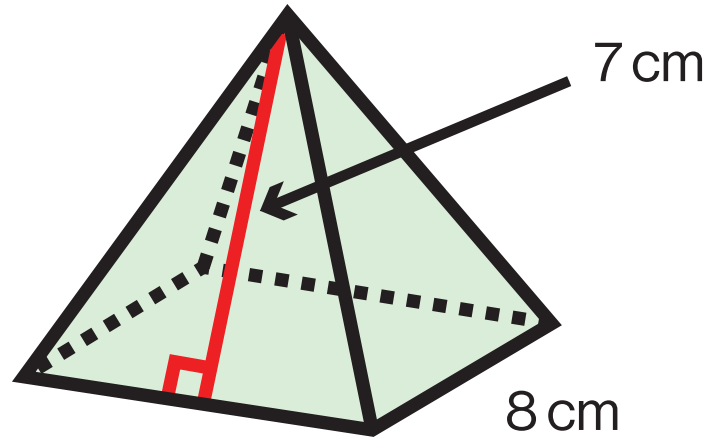
II.



SA:

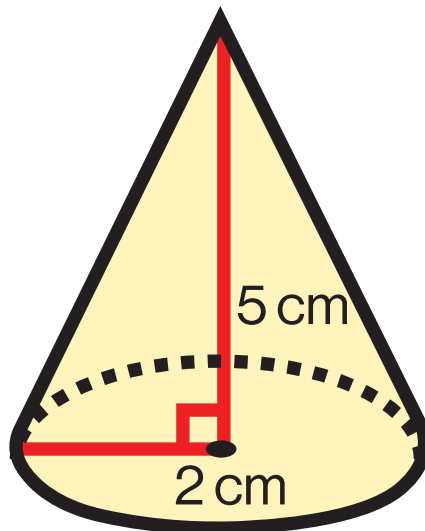
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III.



SA:

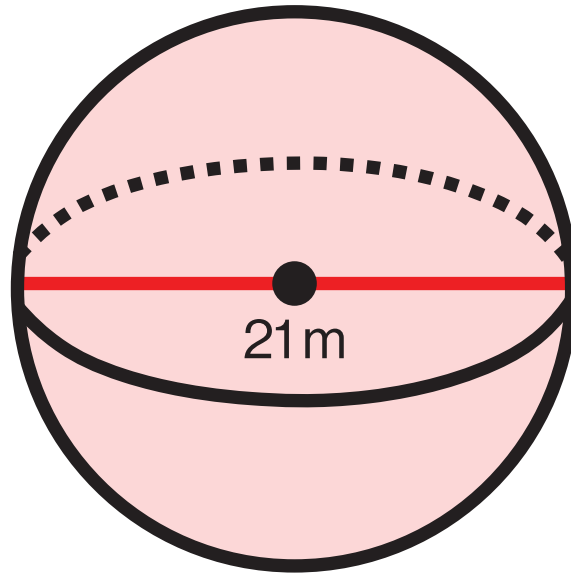
IV.



SA:

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V.



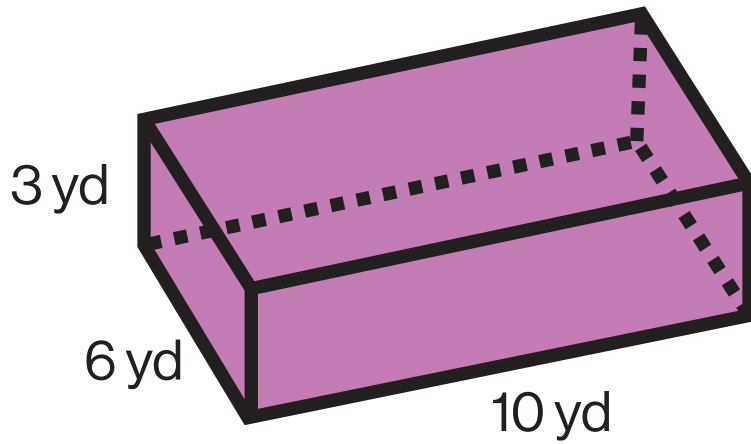
SA:

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Question 2

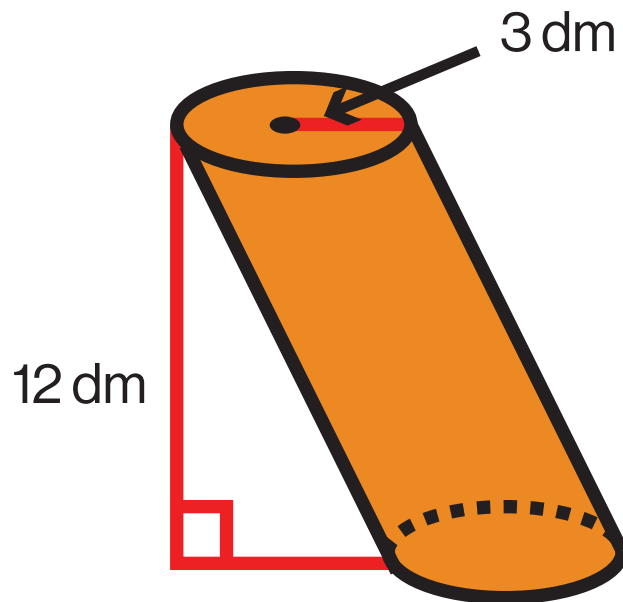
Determine the volume of the solid

I.



$V:$

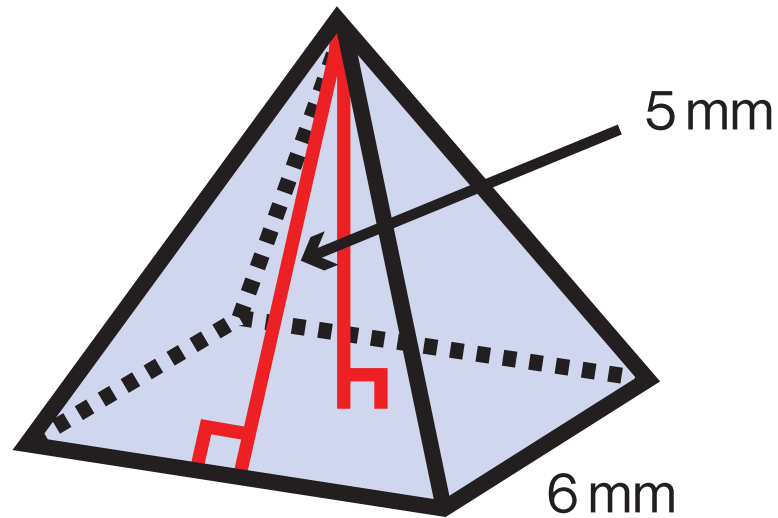
II.



$V:$

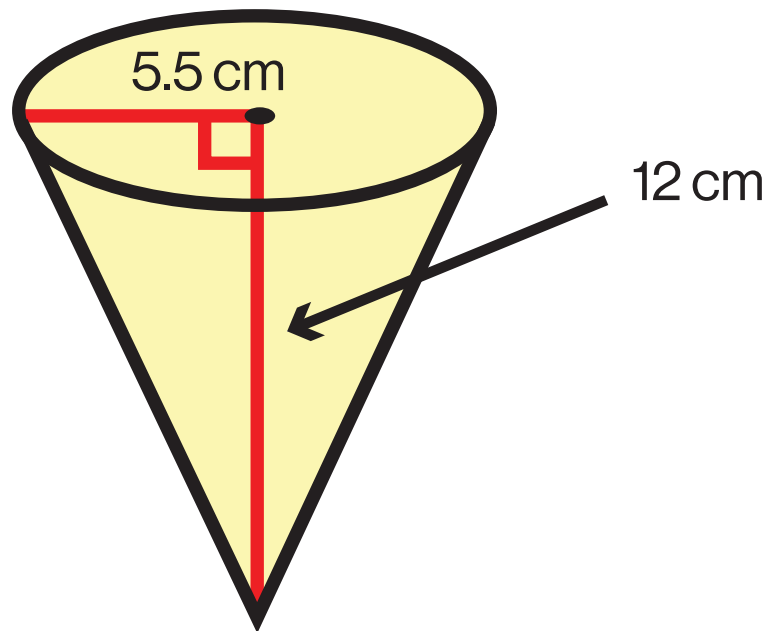
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III.



$V:$

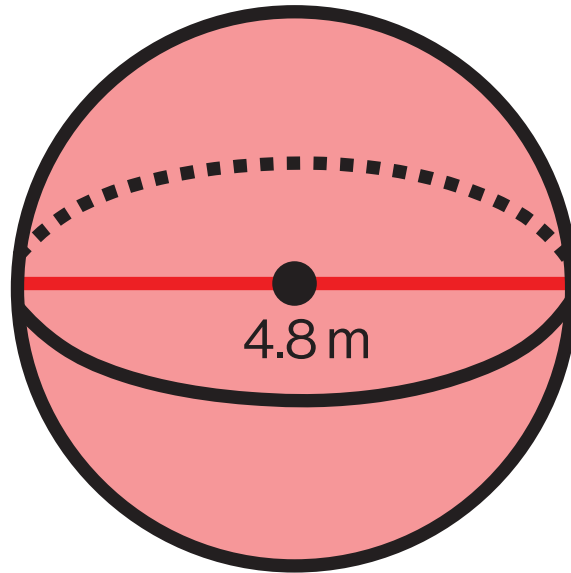
IV.



$V:$

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V.



V:

Solids Practice

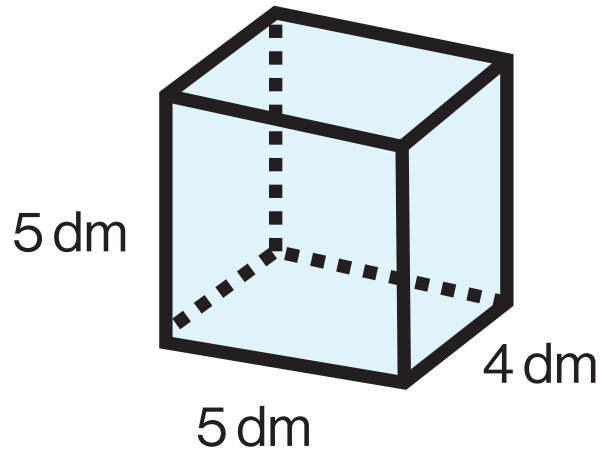
Name: Key

Date: _____

Question 1

Determine the surface area of the solid

I.



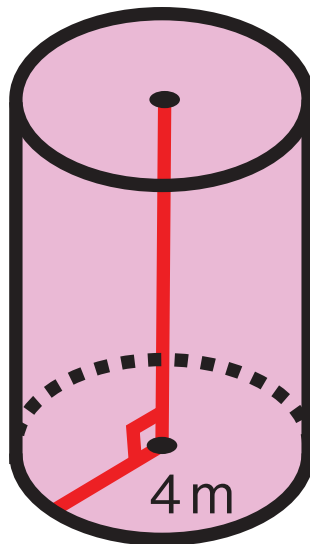
$$\text{Lateral Area (LA)} : (5 + 4 + 5 + 4) \cdot 5 = 90 \text{ dm}^2$$

$$\text{Surface Area (SA)} : 2 \cdot (5 \cdot 4) + 90 = 130 \text{ dm}^2$$

Rectangular Prism

$$\text{SA} : 130 \text{ dm}^2$$

II.



$$\text{Lateral Area (LA)} : 2 \cdot \pi \cdot 4 \cdot 11 = 88\pi \text{ m}^2$$

$$\text{Surface Area (SA)} : 2 \cdot \pi \cdot 4^2 + 88\pi = 120\pi \text{ m}^2 \approx 377 \text{ m}^2$$

Cylinder

$$\text{SA} : 120\pi \text{ m}^2 \text{ OR } \sim 377 \text{ m}^2$$

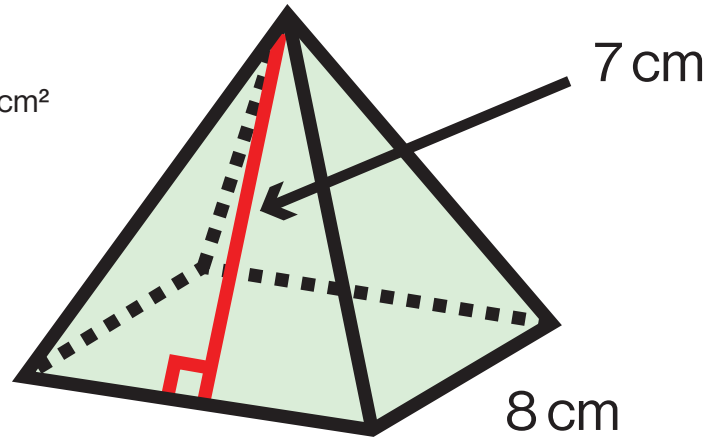
Solids Practice

III.

$$\text{Lateral Area (LA)} : (1/2) \cdot (4 \cdot 8) \cdot 7 = 112 \text{ cm}^2$$

$$\text{Surface Area (SA)} : 8^2 + 112 = 176 \text{ cm}^2$$

Square Pyramid



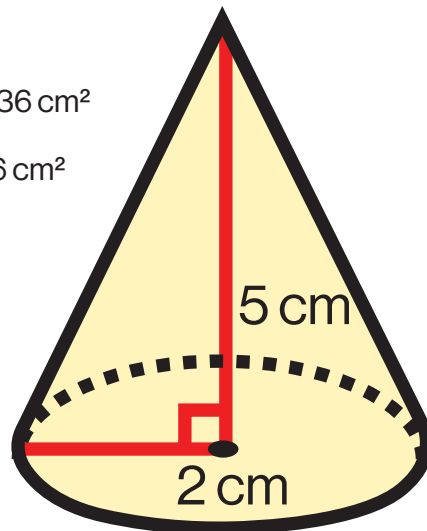
$$\text{SA} : 176 \text{ cm}^2$$

IV.

$$\text{Lateral Area (LA)} : \pi \cdot 2 \cdot \sqrt{29} \approx 33.836 \text{ cm}^2$$

$$\text{Surface Area (SA)} : \pi \cdot 2^2 + 33.836 \approx 46 \text{ cm}^2$$

Cone



Slant Height (ℓ) :

$$\ell = \sqrt{\text{radius}^2 + \text{height}^2}$$

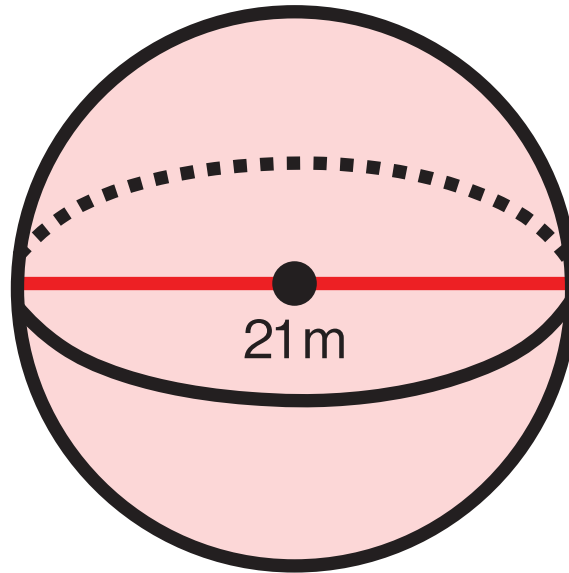
$$\ell = \sqrt{2^2 + 5^2}$$

$$\ell = \sqrt{29}$$

$$\text{SA} : \sim 46 \text{ cm}^2$$

Solids Practice

V.



SA : 1,385 m²

Radius : $21 / 2 = 10.5$ m

Surface Area (SA) : $4 \cdot \pi \cdot 10.5^2 = 441\pi \approx 1,385$ m²

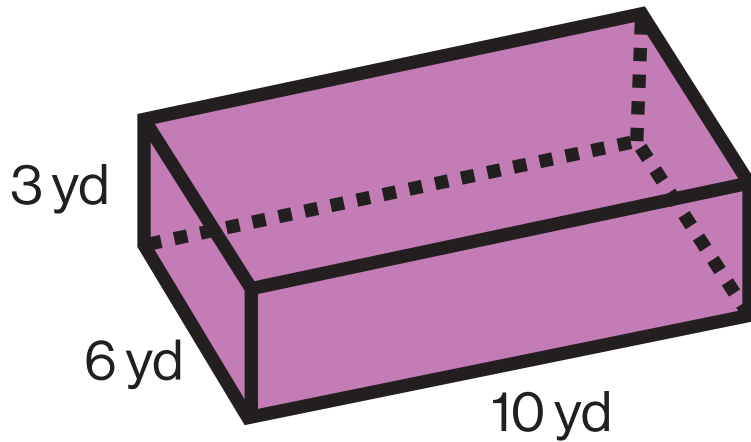
Sphere

Solids Practice

Question 2

Determine the volume of the solid

I.

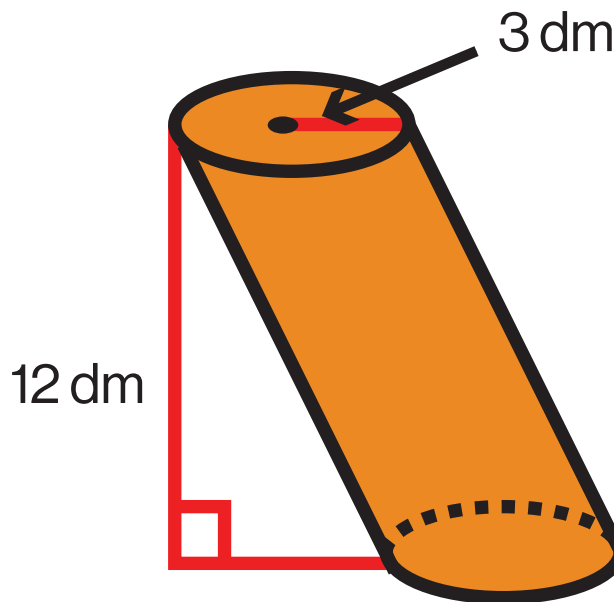


$$\text{Volume (V)} : (6 \cdot 10) \cdot 3 = 180 \text{ yd}^3$$

Rectangular Prism

$$V : 180 \text{ yd}^3$$

II.



$$\text{Volume (V)} : \pi \cdot 3^2 \cdot 12 = 108\pi \text{ dm}^3 \\ \approx 339 \text{ dm}^3$$

Oblique Cylinder

$$V : 108\pi \text{ dm}^3 \text{ OR } \sim 339 \text{ dm}^3$$

Solids Practice

III.

Height (h) :

$\text{leg}^2 + \text{leg}^2 = \text{hypotenuse}$

$$h^2 + 3^2 = 5^2$$

$$h^2 + 9 = 25$$

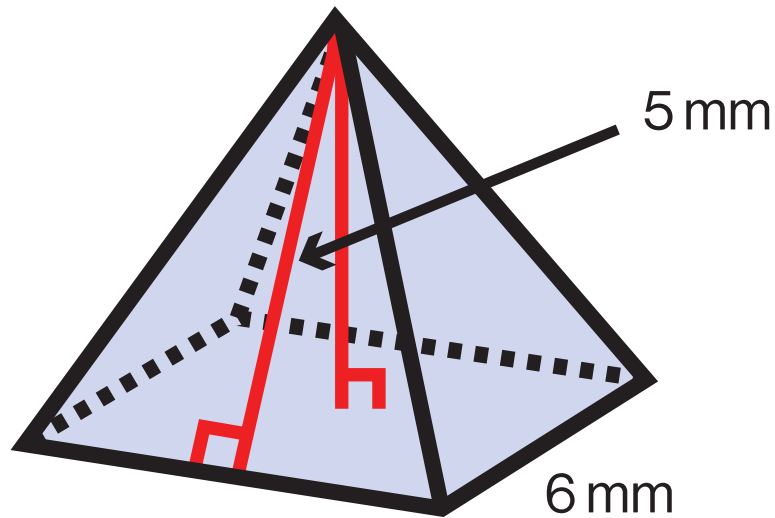
$$h^2 = 16$$

$$h = \sqrt{16}$$

$$h = 4 \text{ mm}$$

$$\text{Volume (V)} : (1/3) \cdot 6^2 \cdot 4 = 48 \text{ mm}^3$$

Square Pyramid

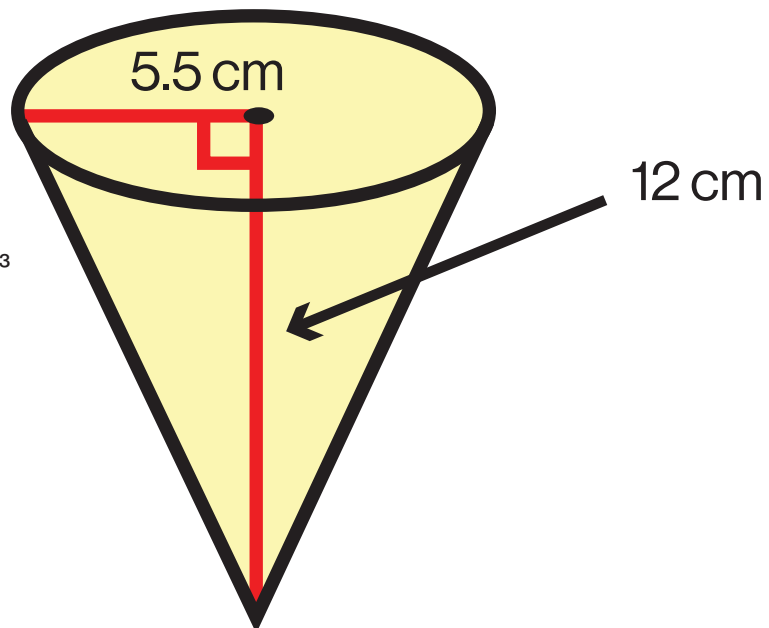


$$V: 48 \text{ mm}^3$$

IV.

$$\text{Volume (V)} : (1/3) \cdot \pi \cdot 5.5^2 \cdot 12 = 121\pi \text{ cm}^3$$
$$\approx 380 \text{ cm}^3$$

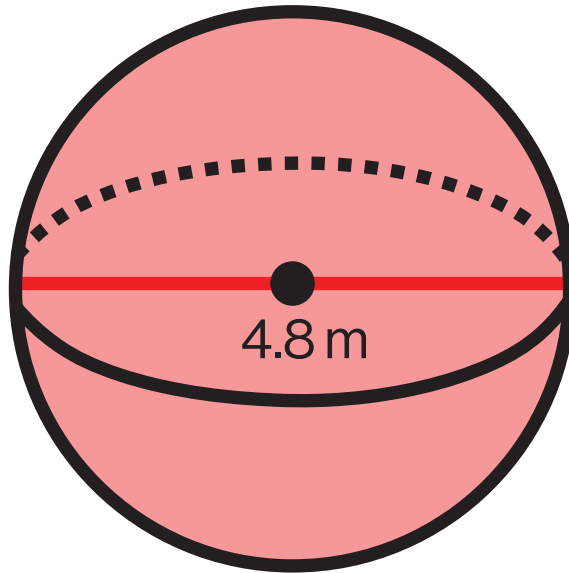
Cone



$$V: 121\pi \text{ cm}^3 \text{ OR } \sim 380 \text{ cm}^3$$

Solids Practice

V.



$$V: 2304\pi / 125 \text{ m}^3 \text{ OR } \sim 58 \text{ m}^3$$

$$\text{Radius: } 4.8 / 2 = 2.4 \text{ m}$$

$$\text{Volume (V): } (4 / 3) \cdot \pi \cdot 2.4^3 = 2,304\pi / 125 \text{ m}^3 \approx 58 \text{ m}^3$$

Sphere