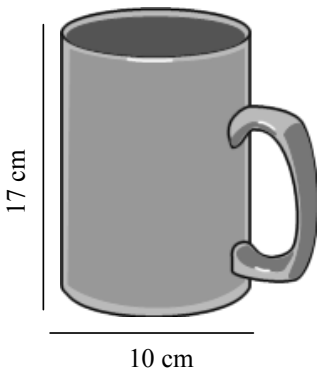


Warm Up...

Find the volume of these figures...

Solution???

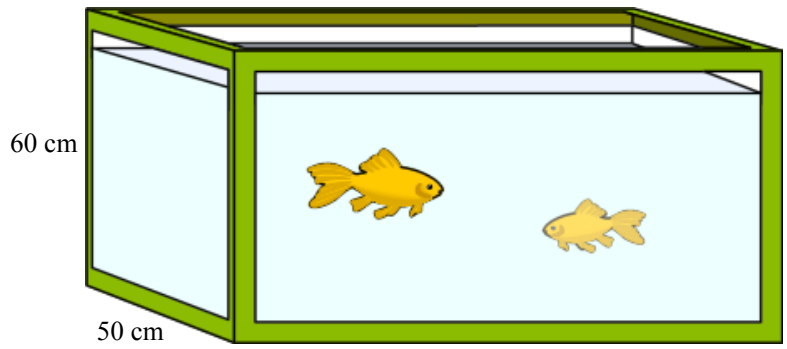


1335.2 cm³

```

π(5)2*17
1335.176878

```



1 m = 100 cm

300 000 cm³

OR

0.3 m³

```

100**50*60
100*50*60
300000

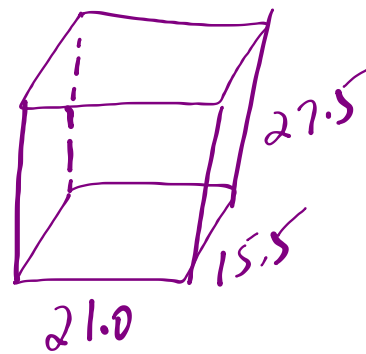
```

HOMEWORK ???

10.1
#3, bc

Find the surface area of each rectangular prism.

| | Length | Width | Height |
|-----|---------|---------|---------|
| (a) | 14.1 cm | 6.2 cm | 4.5 cm |
| (b) | 21.0 cm | 15.5 cm | 27.5 cm |
| (c) | 5.5 m | 3.7 m | 1.5 m |
| (d) | 7.9 cm | 5.4 cm | 7.0 cm |

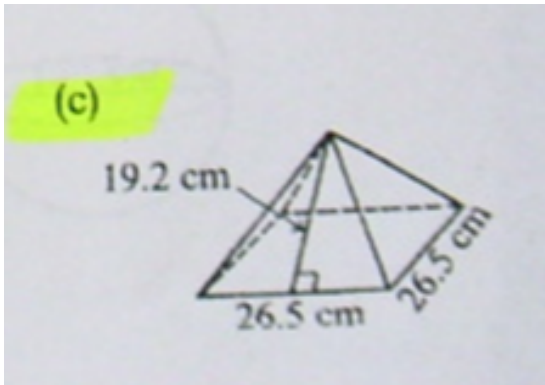


$$2\underline{lw} \quad 2\underline{wh} \quad 2\underline{lh}$$

$$2(21 \times 15.5) + 2(15.5 \times 27.5) + 2(21 \times 27.5)$$

$$SA = 2(21 \times 15.5) + 2(15.5 \times 27.5) + 2(21 \times 27.5)$$

$$= 2658.5 \text{ cm}^2$$



Handwritten calculations for the surface area of the pyramid:

Base: $26.5 \times 26.5 = 702.25$

Area of one triangular face: $26.5 \times 19.2 / 2 = 254.4$

Total surface area: $SA = 702.25 + 4 \times 254.4 = 1719.85 \text{ cm}^2$

Volume versus Capacity

- amount of space an object takes up.
- all objects have volume.
- measured in cubed units.

- amount of material that can be contained in a hollow volume.
- measured in such as litres and gallons.

*** hollow objects have volume and capacity while solid objects only have volume.**

Remember...

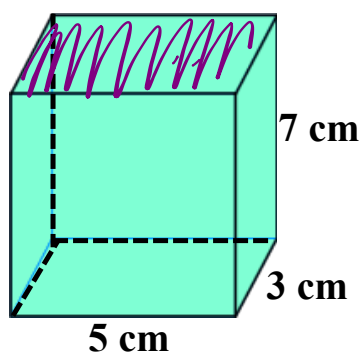
$1 \text{ cm}^3 = 1 \text{ mL}$

How Volume and Capacity are Related

$1 \text{ cm}^3 = 1 \text{ mL}$ $1 \text{ m}^3 = 1000 \text{ L}$ $1000 \text{ cm}^3 = 1 \text{ L}$

NEW

Finding the Volume of a Rectangle Prisms...



$$V = l \times w \times h$$

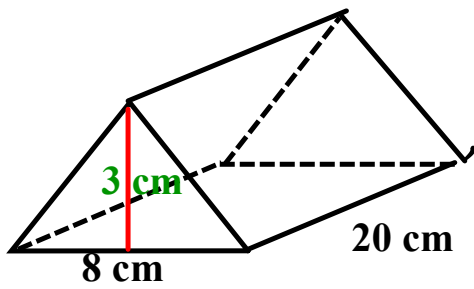
$$V = A_{\text{base}} \times \text{height}$$

Formu

```
5*3*7
█
```

105 cm³

Finding the Volume of a Triangle Prism...



Triangle

$$V = A_{\text{base}} \times \text{height}$$

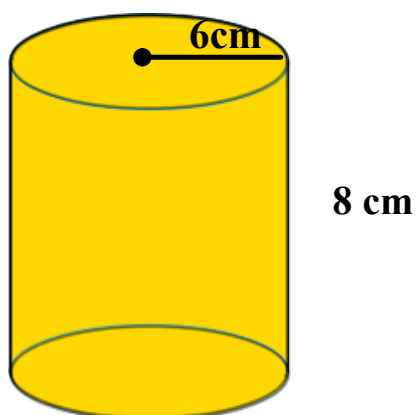
$$V = \left(\frac{b \times h}{2} \right) \times \text{height}$$

$$V = \left(\frac{8 \times 3}{2} \right) \times 20$$

$$V = 240 \text{ cm}^3$$



Finding the Volume of a Cylinder...



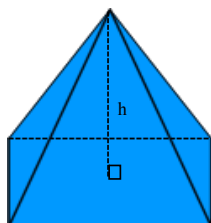
$$V = A_{\text{base}} \times \text{height}$$
$$= \pi r^2 h$$

$$= \pi(6)^2 \times 8$$
$$= 904.7786842$$
$$= 904.8 \text{ cm}^3$$

Form

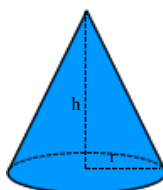
VOLUME FORMULAS...

Pyramid



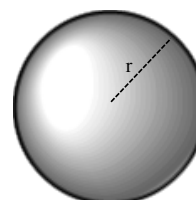
$$V_{\text{pyramid}} = \frac{A_{\text{base}} \times \text{height}}{3}$$

Cone



$$V_{\text{cone}} = \frac{A_{\text{base}} \times \text{height}}{3}$$
$$= \frac{\pi r^2 h}{3}$$

Sphere

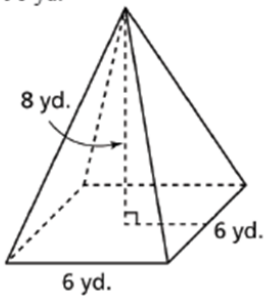


$$V_{\text{sphere}} = \frac{4}{3} \pi r^3$$

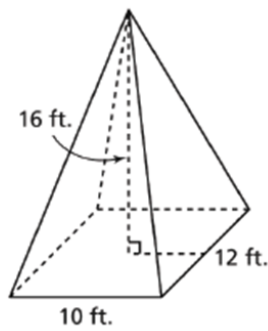
$$V = \frac{4\pi r^3}{3}$$

EXERCISE: Find the volume of each of the following pyramids...

a) 96 yd.^3



b) 640 ft.^3



← ● ERASE to get solution

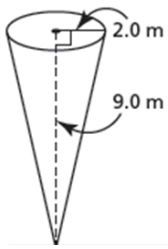
a) $6^2 * 8 / 3$ 96 yd^3

b) $10 * 12 * 16 / 3$ 640 ft^3

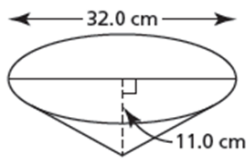
■

EXERCISE: Find the volume of each of the following cones...

a) 37.7 m^3



b) 2948.9 cm^3



← ● ERASE to get solution

```

π(2)²*9/3
37.69911184
π(16)²*11/3
2948.908304
■
    
```

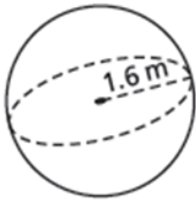
a) 37.700 m^3

2948.91 cm^3

EXERCISE: Find the volume of each of the following spheres...

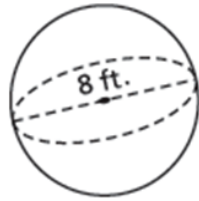
1) 17 m^3

b)



2) 268 ft^3

c)



← ● ERASE to get solution

a)
 $\frac{4}{3} \pi (1.6)^3$
 17.15728468
 $4\pi (11.6)^3$
 6538.265875
 $4\pi (1.6)^3$
 17.15728468

17.16 m^3

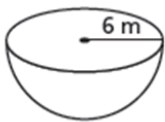
b)
 $\frac{4}{3} \pi (4)^3$
 268.0825731

268.1 ft^3

EXERCISE: Find the volume of each of the following hemispheres...

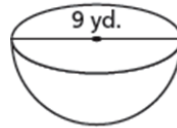
1) 452 m^3

a)



2) 191 yd^3

b)



← ● ERASE to get solution

a)
 $\frac{4}{3} \pi (6)^3 / 2$
 452.3893421
 b)
 $\frac{4}{3} \pi (4.5)^3 / 2$
 190.8517537

HOMEWORK...

Woksheet - Volumes.pdf



-

Attachments

Woksheet - Volumes.pdf