Created by Mr. Lischwe

# Warmup 3/ (The number of cubes that are visible on a Rubik's cube)

Without looking them up, try to write each formula:

- 1) Circumference of circle
- 2) Area of circle
- 3) Rectangular Prism
- 4) Triangular Prism
- 5) Cylinder
- 6) Cone
- 7) Rectangular Pyramid
- 8) Sphere

### Today: Whiteboard practice

#### **Expectations**

- Show work on the whiteboard
- Round to the nearest tenth (unless it says otherwise)
- See if you can do them without looking up the formulas! (You may look if you need to)
- If you finish a problem early, you may not read/draw/etc. Be a resource for others at your table!

Find the area of the shaded region.



Area = big circle – small circle Diameter of big circle = 14, radius = 7 Diameter of small circle = 8, radius = 4  $A = \pi(7)^2 - \pi(4)^2$  $A = 49\pi - 16\pi$  $A = 33\pi$  (exact)  $A \approx 103.7 in^2$  (rounded)

### Find the volume:



Volume = cylinder +  $\frac{1}{2}(sphere)$ 

Volume =  $\pi \cdot 10^2 \cdot 16 + \frac{1}{2} \left( \frac{4}{3} \pi \cdot 10^3 \right)$ 

Volume =  $5026.5 + \frac{1}{2}(4188.8)$ 

**Volume**  $\approx$  7120.9 *units*<sup>3</sup>

### Find the volume:



Volume = cube - cone Cube =  $6 \cdot 6 \cdot 6$ Cube = 216 Cone =  $\frac{\pi \cdot 2^2 \cdot 6}{3}$ Cone  $\approx 25.1$ Volume  $\approx 216 - 25.1$ 

Volume  $\approx 190.9 \ cm^3$ 

### Find the volume:

• Can you figure out what you need to do?????? The height is perpendicular to the





$$3^2 + h^2 = 9^2$$
  
 $h = \sqrt{72}$  or  $\approx 8.49$ 

$$V = \frac{1}{3}\pi \cdot 3^2 \cdot \sqrt{72}$$
(More exact than  

$$V = \frac{1}{3}\pi \cdot 3^2 \cdot \sqrt{72}$$
(More exact than  
using 8.49)  

$$V \approx 80, 0 \text{ units}^3$$



#### A truck that carries gasoline is shown.



How much gasoline can the cylindrical tank hold?

- ▲ 212π ft<sup>3</sup>
- B 424π ft<sup>3</sup>
- © 848n ft<sup>3</sup>  $V = \pi \cdot 4^2 \cdot 53$
- $V = 848\pi$ (Those are all pi symbols!!!)

• Find the volume of the figure. Leave your answer as an **exact** answer (leave  $\pi$  in it)



### Working backwards...

• Find the width of the prism.

 $V=288\,ft^3$ 

V = lwh $288 = 12 \cdot w \cdot 6$ 





12 ft

## Working backwards...

• Find the height of the cylinder.

 $V = 882\pi m^3$ 



 $V = \pi r^{2} \cdot h$   $\frac{882\pi}{\pi} = \frac{\pi}{7} \cdot 7^{2} \cdot h$   $882 = 7^{2} \cdot h$   $882 = 49 \cdot h$  18 = h

### Working backwards...

• Find the radius of the cone.



$$V = \frac{\pi r^2 \cdot h}{\sqrt[3]{r^2 \cdot 18}}$$

$$96\pi = \frac{\pi r^2 \cdot 18}{\sqrt[3]{3}}$$

$$96 = \frac{r^2 \cdot 18}{\sqrt[3]{3}}$$

$$96 = 6 \cdot r^2$$

$$16 = r^2$$

$$4 = r$$

# Homework

• Volume Worksheet