

NOTES: LESSON 8.2 – **VOLUME** w/ WORD PROBLEMS

**Learning Goal:** I can solve word problems involving the **volume** of a cylinder, cone, and sphere.

**Meta de Aprendizaje:** Puedo resolver problemas de palabras relacionados con el **volumen** de un cilindro, cono y esfera.

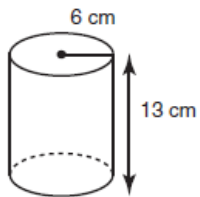
**Language Goal:** I can discuss with a partner how to calculate the **Area of the Base, B**, and write an explanation.

**Lenguaje Objetivo:** Puedo discutir con un compañero cómo calcular el **Área de la Base, B**, y escribir una explicación.

**KEY WORDS**  
for  
**VOLUME**

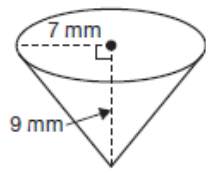
**VOLUME FORMULA REVIEW**

**CYLINDER**



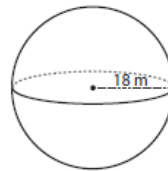
$$V = B h$$

**CONE**



$$V = \frac{1}{3} B h$$

**SPHERE**



$$V =$$

**HEMISPHERE**



$$V =$$

**VOLUME & SURFACE AREA WORD PROBLEM HINTS**

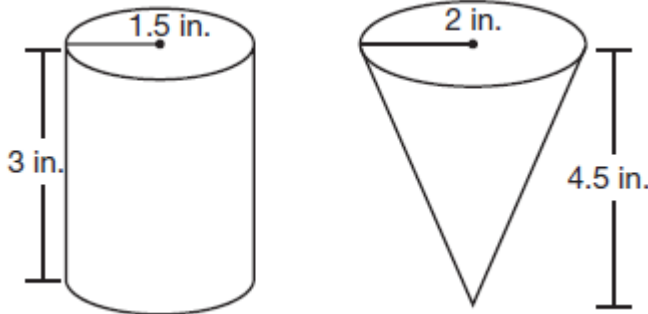
1. Is this a **volume** or **surface area** problem? **How do you know?**
2. What are you solving for: **V**, **TSA**, **LSA**, **B**, or **h**?
3. Are there any numbers or words trying to **trick** us?
4. Is there another step, like to **add**, **subtract**, **multiply**, or **divide**? **How do you know?**

**VOLUME STEPS:**

- Step 1: Write the **Volume** Formula in a T-Chart  
Step 2: Replace "**B**", if needed, w/ the correct **Area** Formula  
Step 3: Replace the variables with your numbers  
*(Be sure to use the radius, not the diameter!)*  
Step 4: Use your calculator to find the **Volume**

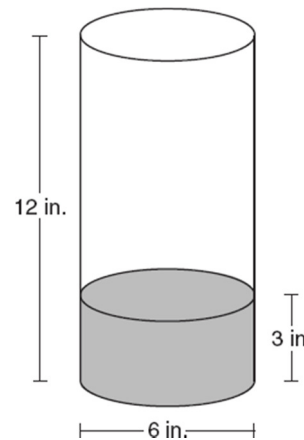
**EXAMPLE 1**

Which paper cup can **hold** more water, the cylinder or the cone? **How much more** can the bigger cup **hold**?



**EXAMPLE 2**

A cylindrical glass vase is 6 inches in diameter and 12 inches high. There are 3 inches of sand in the vase, as shown below.



Which of the following is closest to the **volume** of the sand in the vase?

- F.**  $85 \text{ in.}^3$
- G.**  $254 \text{ in.}^3$
- H.**  $54 \text{ in.}^3$
- J.**  $339 \text{ in.}^3$