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# PAP GEOMETRY PERIOD THREE CHAPTER 11 SECTIONS 5-7

## SECTION 5: Volumes of Pyramids and Cones

$$V = \frac{1}{3}Bh$$

$$V = \frac{1}{3}Bh, \text{ or } V = \frac{1}{3}\pi r^2 h$$



Problems:

1. Find the volume.



2. Find x. Volume =  $21\pi$



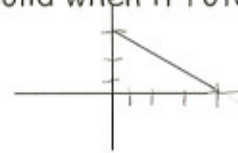
3. Find the volume.



4. Find x. Volume =  $18\sqrt{3}$



5. Describe the solid when it rotates line  $y = -1$ . Find the volume in  $\pi$ .



## SECTION 6: Surface Areas and Volumes of Spheres

$$S.A. = 4\pi r^2$$

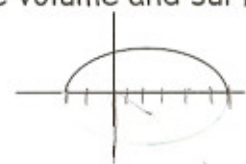
$$V = \frac{4}{3}\pi r^3$$



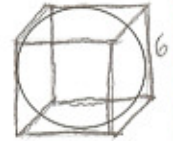
Problems:

The volume of a sphere is  $5000 \text{ m}^3$ .  
What is the surface area?

The region enclosed by the semi-circle below is revolved completely about the x axis. Describe the solid revolution that is formed, and find the volume and surface area in terms of  $\pi$ .



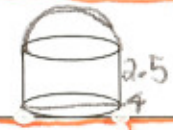
What is the approximate volume of space between the sphere and the cube?



If the ice cream melts, would the cone overflow? Explain



What is the surface area and volume?



## Section 7: Areas and Volumes of Similar Solids

If the similarity ratio of two similar solids is  $a : b$ , then the ratio of their corresponding areas is  $a^2 : b^2$ , and the ratio of their volumes is  $a^3 : b^3$ .

Are the two cylinders similar?



If so, give the ratio.

The volume of two spheres are  $327\pi \text{ mm}^3$  and  $8829\pi \text{ mm}^3$ . What is the ratio of their surface areas?

Ratio to surface area is  $a^2 : b^2$  as to ratio of volume is to \_\_\_\_\_?

Find the surface area of the larger figure.

- $V = 27 \text{ in}^3$
- $V = 125 \text{ in}^3$
- $S.A. = 63 \text{ in}^2$
- $S.A. = ?$

Find the volume of the smaller figure.

- $S.A. = 52 \text{ ft}^2$
- $S.A. = 208 \text{ ft}^2$
- $V = 192 \text{ ft}^3$

GOOD LUCK! 😊