UNIT 12 PRACTICE **Name** _____

You may use CALCULATORS and your GEOMETRY FORMULA CHART!

1. The surface areas of two similar cones are 121 ft^2 and 36 ft^2.

   a. What is the ratio of the lateral areas?

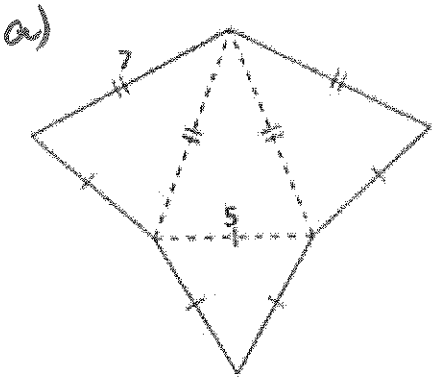
   b. What is the similarity ratio of the large cone to the small cone?

   c. What is the ratio of their radii?

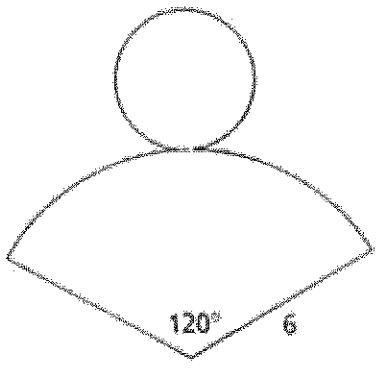
   d. What is the ratio of their volumes?

2. For the following nets, name the figure that would be formed and find its surface area.

a)



b)



3. A parallelogram has sides of 4 cm and 8 cm. After being dilated, the resulting image has an area of 8 cm^2. What scale factor was applied to the sides of the original parallelogram?

A 2
B $\frac{1}{2}$
C 4
D $\frac{1}{4}$

4. Leo is painting the walls of his bedroom. His bedroom measures 10 feet by 14 feet and is 8 feet tall. He will not paint the 6 foot by 2 foot door or his 3 foot by 4 foot window. How many square feet will Leo paint?

A 360 ft^2
B 384 ft^2
C 408 ft^2
D 1,096 ft^2

5. A spherical balloon holds approximately 3,053.63 cm^3 of air when it is full. What is the radius of the balloon when it is full?

6. The height of a cylinder is 18 inches. The area of the base of the cylinder is 20 inches. Which of the following expressions could be used to find the volume of the cylinder?

A 20 / 18
B 18 / 20
C 18×20
D $\pi(20)^2(18)$

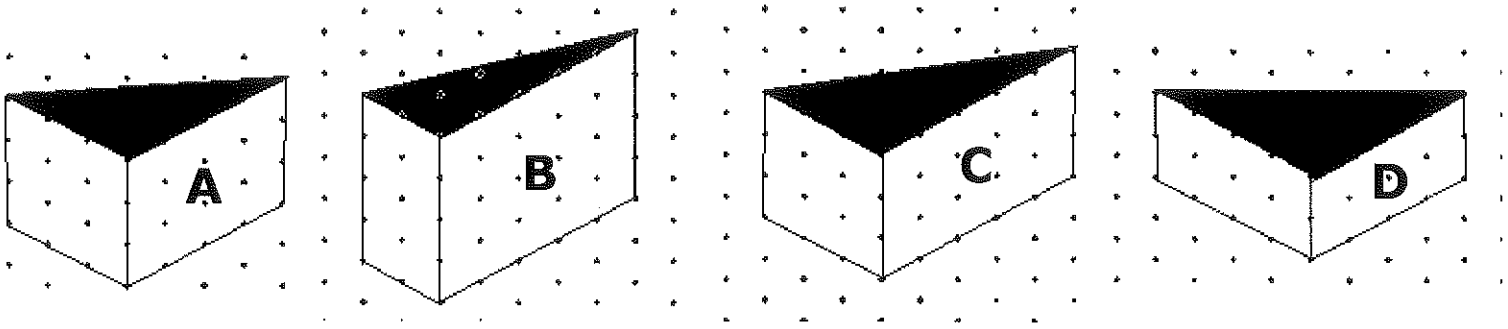
7. The base area of a cylindrical can is 75 cm^2. The volume of the can is 1,125 cm^3. What is the height of the can?

A 8.4 cm
B 10.5 cm
C 12 cm
D 15 cm

Name: _____ Period: _____ Bernhard GT GEOMETRY – SURFACE AREA AND VOLUME

_____ 8 Which figure accurately represents the triangular prism described below?

3 units high, with bases that are right triangles with legs 3 units and 5 units long

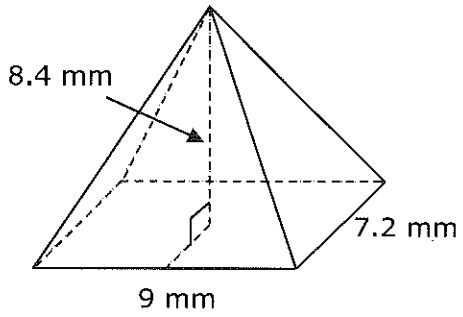


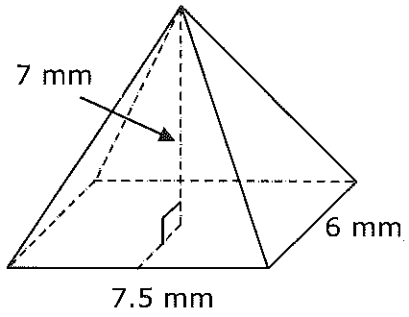
9. A sphere has a volume of 1200π cm^3. Find the surface area of the sphere.

10. a). Determine whether the pair of solids are:

Similar Congruent Neither

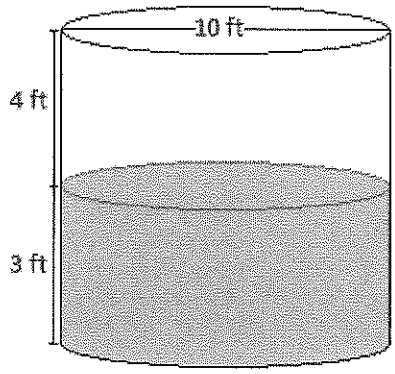
b). Show all your work to justify your answer.
(Figures are not necessarily drawn to scale)





11. Two similar octagonal prisms have volumes of 64 cm^3 and 216 cm^3. The smaller prism has a surface area of 90 cm^2. What is the surface area of the larger prism?

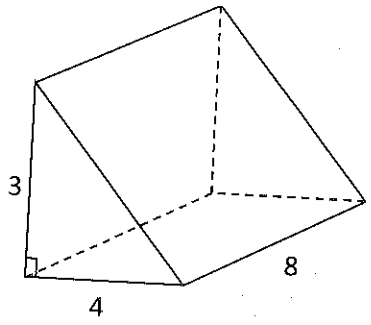
12. A cylindrical water tank is shown below. What is the approximate volume of the water in cubic feet?



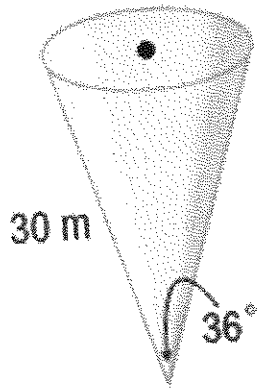
A 235.62 ft^3
B 549.78 ft^3
C 942.48 ft^3
D 2,199.11 ft^3

13. FIND THE SURFACE AREA & VOLUME OF EACH.

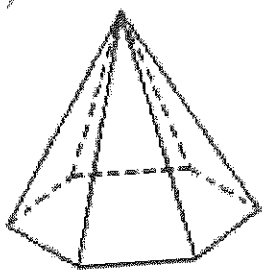
a)



b)

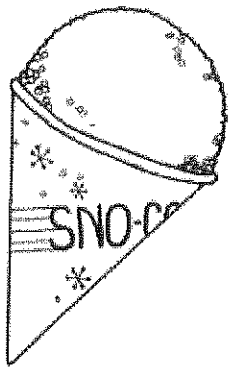


c)



The height is 11m and the apothem is 6m.

14. A snow cone has a paper cone that is 8 cm deep and has a diameter of 5 cm. The flavored ice comes in a spherical scoop with a diameter of 5 cm.



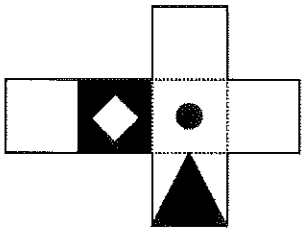
a) If **all** the ice melts into the cone, will the cone overflow?

Yes No

b) Show ALL work to justify your answer.

c) Explain why the melted ice does or does not overflow

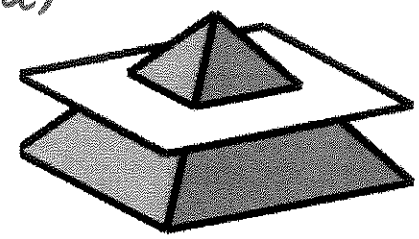
15. Which figure to the right would be formed by the net shown?



a. b. c. d.

16 What figure would be formed by each cross-section?

a)



b)