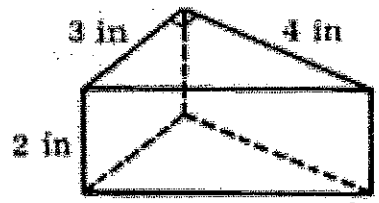
Name: _____ Date: _____

Quiz 2 Review

Volume of a Prism:
Volume of a Cylinder:
Volume of a Cone:
Volume of a Pyramid:
Volume of a Sphere:
Surface Area of a Sphere:
Similarity Ratio:
Area Ratio:
Volume Ratio:

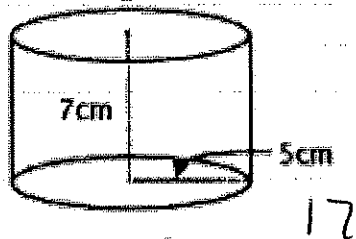
11) Find the ~~lateral area, total surface area, and~~ volume of the figures.

a)



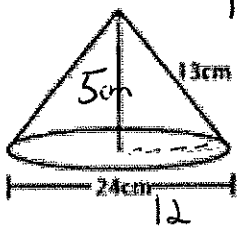
$12\ in^3$

b)



$175\pi\ cm^3$

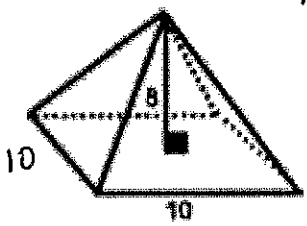
c)



12

$240\pi\ cm^3$

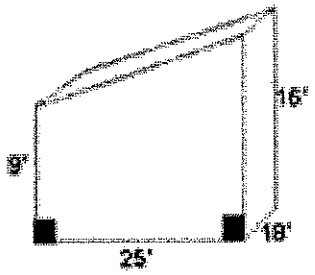
d)



$266.67\ u^3$

12) Find the ~~surface area and~~ volume of the solid.

$V = 5625\ ft^3$



13) A cone with radius 6cm and height 12cm is filled to capacity with liquid. Find the height of a cylinder with radius 4 cm that will hold the same amount of liquid.

9cm

14) If the diameter of a soap bubble is known to be 2 mm, what is the surface area of the bubble? What is the volume?

$SA = 12.57\ mm^2$ ($4\pi\ mm^2$) $V = 4.19\ mm^3$ ($4/3\ \pi\ mm^3$)

15) A pipe is 300 cm long and has inside radius 4 cm and outside radius 5 cm. Find the volume of metal. Hint: draw a diagram.

$2700\pi\ cm^3$

16) The volume of a sphere is 36π. Find the surface area.

$SA = 36\pi$

17) A pharmacist is filling medicine capsules. The capsules are cylinders with half spheres on each end. If the length of the cylinder is 12 mm and the radius is 2 mm, how many cubic mm of medication can one capsule hold?

$58\ 2/3\ \pi\ mm^3$

18) The number of square centimeters in the surface area of a sphere is twice the number of cubic centimeter in the volume of a sphere. Find the radius of the sphere.

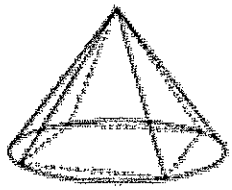
1.5 cm

~~19) A cylinder has a surface area of 1000 in². Find the height of the cylinder if the radius is 8 in (round to the nearest whole number).~~

20) A regular square pyramid is inscribed in a cone with radius 4 cm and height 4 cm.

a) What is the volume of the pyramid?

b) Find the slant height of the cone and the pyramid.



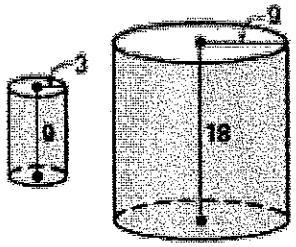
a) $42.67\ cm^3$

b) pyramid = $2\sqrt{6}$ cm
cone = $4\sqrt{2}$ cm

21) Are the figures below similar? Explain.

No, radii and heights have different scale factors.

$\frac{3}{9} = \frac{1}{3}$ $\frac{9}{18} = \frac{1}{2}$



22) Cube C has a surface area of 36 units² and Cube D has a surface area of 144 units². Find the scale factor of C to D.

1 : 2

23) Two rectangular prisms are similar. Their scale factor is 3:5. For the smaller prism, the surface area is 90 cm² and the volume is 54 cm³. Find the surface area and volume of the larger figure.

SA = 250 cm^2 V = 250 cm^3

24) Cone A is similar to cone B. The scale factor of A:B is 2:3. The surface area and volume of cone A are 90π m² and 100π m³. Find the surface area and volume of cone B (express answers in terms of π).

$202.5\pi\ m^2$ = SA V = $337.5\pi\ m^3$

25) The volume of sphere A is 343π in³ and the volume of sphere B is 8π in³. Find the scale factor of A:B.

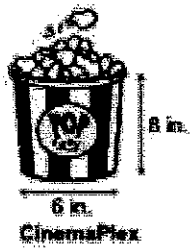
7 : 2

26) At the MetroPlex movie theater, popcorn is served in a box. At the CinemaPlex movie theater, popcorn is served in a cylindrical container. At home, Mom serves popcorn in a bowl (hemisphere in shape). Based upon the given dimensions, where are you getting the most popcorn? (Disregard the thickness of the container)

$V_{bowl} = 83\frac{1}{3}\pi\ in^3 = 261.8\ in^3$

$V_{cylinder} = 72\pi\ in^3 = 226.19\ in^3$

$V_{box} = 200\ in^3$



Bowl has the most popcorn.