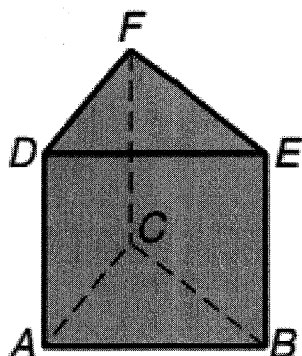


ASSIGNMENT

Name each solid. Then name the bases, faces, edges, and vertices.

1.



a. Name: Triangular prism

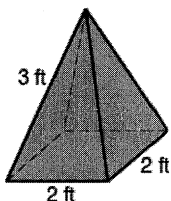
b. Bases: $\triangle FDE$, $\triangle CAB$

c. Faces: $DEBA$, $FEBC$, $DFCA$ +
2 bases

d. Edges: \overline{DF} , \overline{FE} , \overline{ED} , \overline{AC} , \overline{CB} , \overline{AB} ,
 \overline{DA} , \overline{EB} , \overline{FC}

e. Vertices: A, B, C, D, E, F

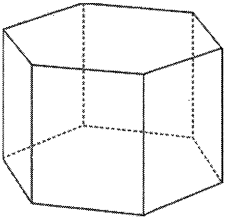
2. Name the polyhedron below. Then state the number of faces, edges, and vertices.

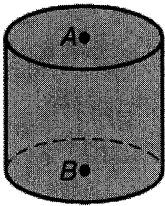


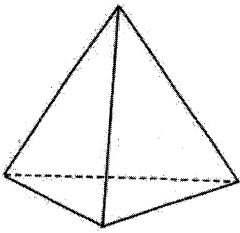
Name: Square Pyramid

of Faces: 5 # of Edges: 8 # of Vertices: 5

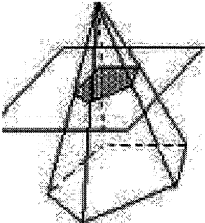
For #3-5, name each solid.

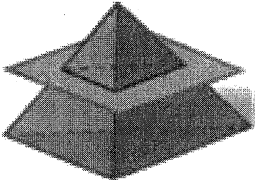
3. 
hexagonal prism

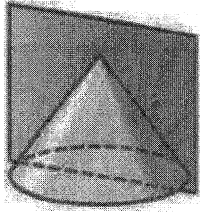
4. 
cylinder

5. 
triangular pyramid

Name the shape of each cross section.

6. 
pentagon

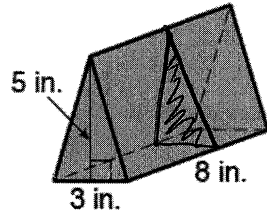
7. 
triangle

8. 
triangle

For #9-12, draw and label the dimensions of the described cross section.
Then find the area of the cross section.

9. parallel to the base of the triangular prism.

Drawing:



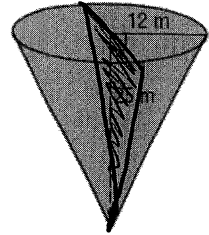
Area:

$$A_{\Delta} = \frac{1}{2}bh$$

$$= 7.5 \text{ in}^2$$

10. perpendicular to the base of the cone and intersects the vertex

Drawing:



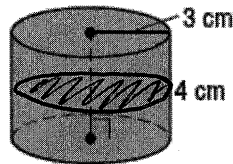
Area:

$$A_{\Delta} = \frac{1}{2}bh$$

$$= \frac{1}{2}(24)(25) = 300 \text{ m}^2$$

11. parallel to the base of the cylinder

Drawing:



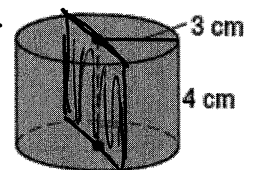
Area:

$$\text{Circle} = \pi r^2$$

$$9\pi \approx 28.27 \text{ cm}^2$$

12. perpendicular to the base of the cylinder through the diameter of the base.

Drawing:



Area:

$$\text{Rectangle} = bh$$

$$6(4) = 24 \text{ cm}^2$$

Review:

13. The ratio of the measures of the angles of a triangle is 3:4:5. Find the measures of all the angles of the triangle.

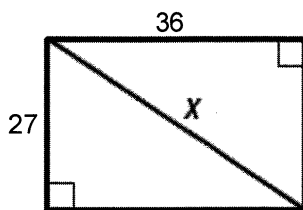
$$3x + 4x + 5x = 180$$

$$45^\circ, 60^\circ, 75^\circ$$

14. A circle has a radius of 20 inches. Find the circumference of the circle.

$$40\pi \approx 125.66 \text{ in}$$

15. Find the value of x to the nearest tenth.



$$x = 45$$

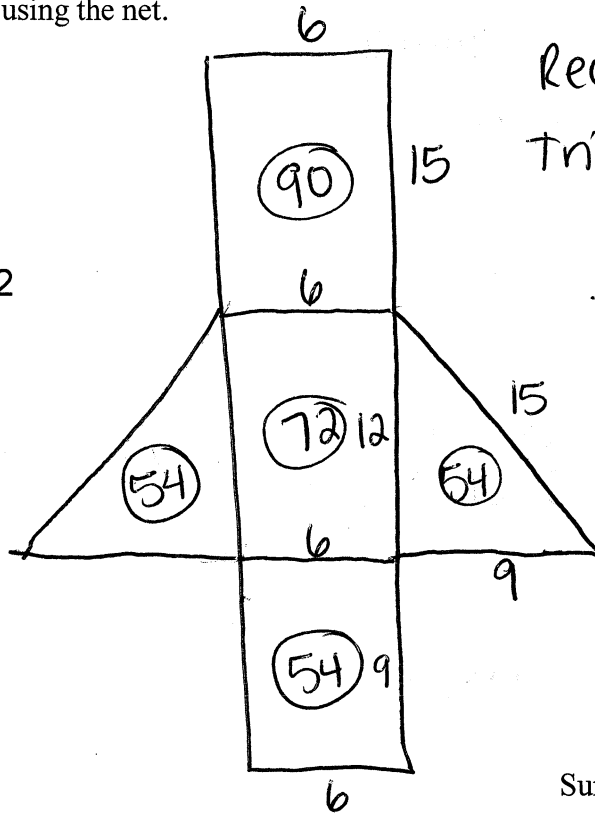
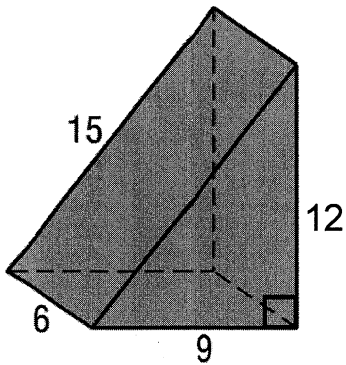
16. Find the area of the figure below.

$$A_{\Delta} = \frac{1}{2}bh$$

$$12 + 10.5$$

$$A = 22.5 \text{ ft}^2$$

1. Draw the net for the solid below. **Label ALL** dimensions.
Then find the surface area using the net.

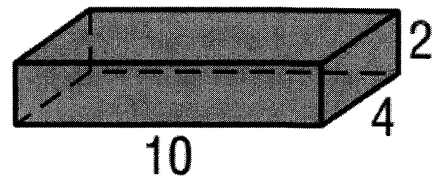
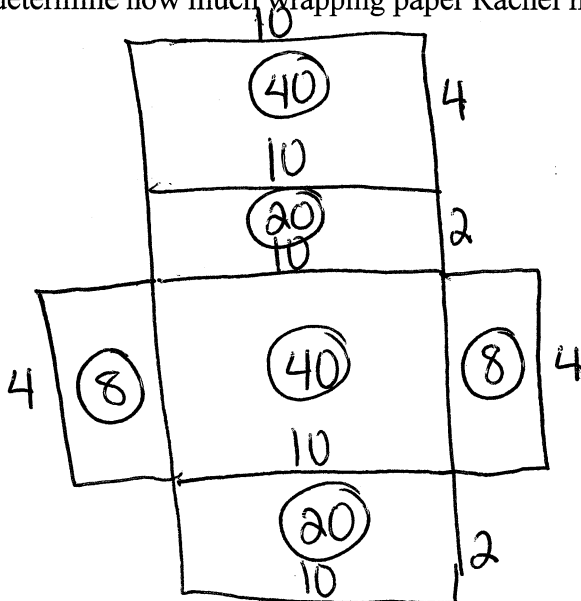


Rectangles = bh
Triangles = $\frac{1}{2}bh$

Total = 324 in^2

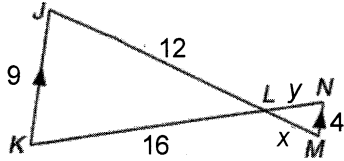
Surface Area = 324 in^2

2. Rachael needs to wrap a package to ship to her aunt.
The rectangular package measures 2 inches high, 10 inches long, and 4 inches wide.
Draw a net of the package. **Label ALL** dimensions.
Then determine how much wrapping paper Rachel needs to cover the package.



Amount of wrapping paper needed = 136 in^2

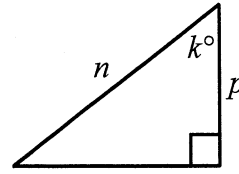
3. Find the values of x and y .



$$\frac{12}{x} = \frac{9}{4} \qquad \frac{16}{y} = \frac{9}{4}$$

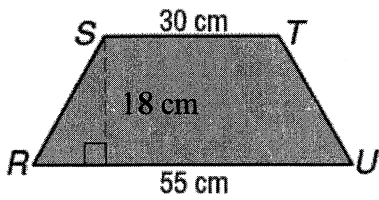
$x = \underline{5.3}$ $y = \underline{7.1}$

4. Decide if sin, cos or tan would be best.



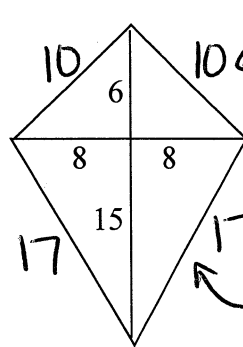
$$\cos k^\circ = \frac{p}{n}$$

5. Find the area of the figure.



Trapezoid = $\frac{1}{2}h(b_1 + b_2)$
 765 cm^2

6. Find the perimeter of the kite below:



$$8^2 + 6^2 = c^2$$

$$P = 54 \text{ un.}$$

$$8^2 + 15^2 = c^2$$

In circle P, $m\angle GPH = 41^\circ$. Find each measure.

7. $m\widehat{EF} = 41^\circ$

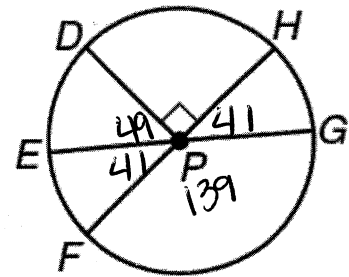
8. $m\widehat{DE} = 49^\circ$

9. $m\widehat{FG} = 139^\circ$

10. $m\widehat{DG} = 131^\circ$

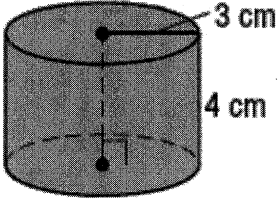
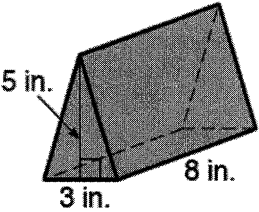
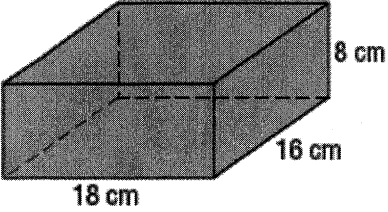
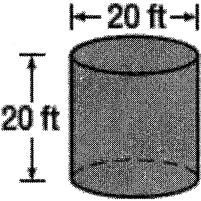
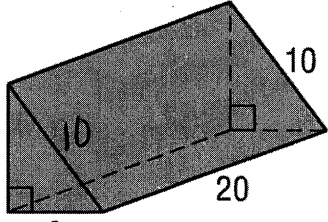
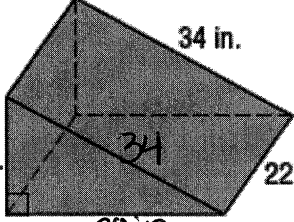
11. $m\widehat{DFG} = 229^\circ$

12. $m\widehat{DGE} = 311^\circ$



ASSIGNMENT

For #1-6, find the volume of each figure. Round values to the nearest hundredth if necessary.

<p>1.</p>  $V = \pi r^2 h$ $= \pi 3^2 (4)$ <p style="text-align: right;">Volume = <u>$36\pi \approx 113.1 \text{ cm}^3$</u></p>	<p>2.</p>  $V = Bh$ $= 7.5(8)$ $B = \frac{1}{2}bh$ $= 7.5$ <p style="text-align: right;">Volume = <u>60 in^3</u></p>
<p>3.</p>  $V = Bh$ <p style="text-align: right;">Volume = <u>2304 cm^3</u></p>	<p>4.</p>  $V = \pi r^2 h$ $r = 10$ <p style="text-align: right;">Volume = <u>$2000\pi \approx 6283.19 \text{ ft}^3$</u></p>
<p>5.</p>  $a^2 + b^2 = 10^2$ $a = 8$ $B = \frac{1}{2}bh$ $= 24$ <p style="text-align: right;">Volume = <u>480 in^3</u></p>	<p>6.</p>  $16^2 + b^2 = 34^2$ $b = 30$ $B = \frac{1}{2}bh$ $= 240$ <p style="text-align: right;">Volume = <u>5280 in^3</u></p>

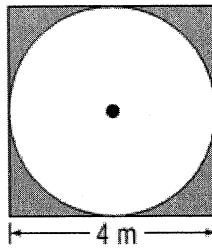
7. Find the length of \overline{MN} under a dilation with a scale factor of $\frac{2}{3}$ if $M'N' = 28$.

$$r = \frac{\text{image}}{\text{preimage}}$$

$$\frac{2}{3} = \frac{28}{x}$$

$$MN = 42$$

8. Find the area of the shaded region below.

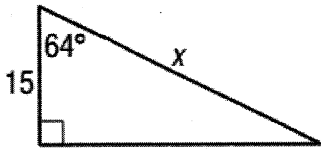


$$\square - \bigcirc$$

$$bh - \pi r^2$$

$$A = 16 - 4\pi \approx 3.43 \text{ m}^2$$

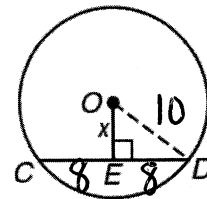
9. Find the value of x in the triangle below.



$$\cos 64 = \frac{15}{x}$$

$$x = 34.2$$

10. In circle O, $OD = 10$ and $CD = 16$. Find x .



$$x = 6$$

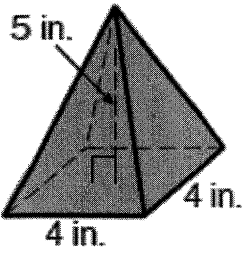
Geometry B

11.4 Volumes of Pyramids and Cones ASSIGNMENT

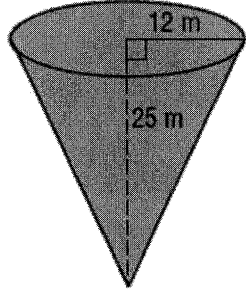
Name _____

Hour _____ Date _____

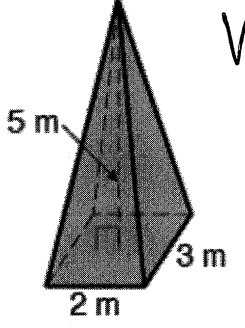
For #1-6, find the volume of each figure. Round values to the nearest hundredth if necessary.

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

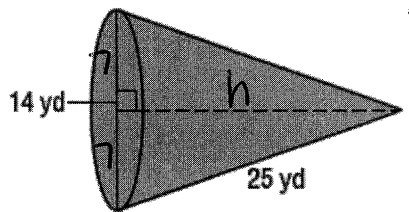
Volume = 26.67 in^3

2.  $V = \frac{1}{3} \pi r^2 h$

Volume = $1200\pi \approx 3769.91 \text{ m}^3$

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

Volume = 10 m^3

4.  $V = \frac{1}{3} \pi r^2 h$

$7^2 + h^2 = 25^2$
 $h = 24$

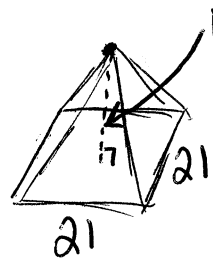
Volume = $392\pi \approx 1231.5 \text{ yd}^3$

5. A cone has a base with a radius of 9 feet and a volume of 189π cubic feet. Find the height of the cone.

$V = \frac{1}{3} \pi r^2 h$
 $189\pi = \frac{1}{3} \pi 9^2 h$

Height = 7 feet

6. Draw a square pyramid that has a height of 24 centimeters and a base with a side length of 21 centimeters. Then find the volume.

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

Volume = 3528 cm^3

7. The volume of a pyramid is 216 cubic inches. The pyramid's height is 18 inches. Find the area of the base.

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

$$216 = \frac{1}{3} B(18)$$

Area of base = 36 in²

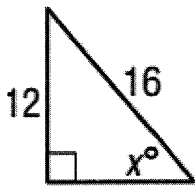
8. The volume of a pyramid is 120 cubic meters, and the area of the base is 50 square meters. Find the height of the pyramid.

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

$$120 = \frac{1}{3} (50)h$$

Height = 7.2 m

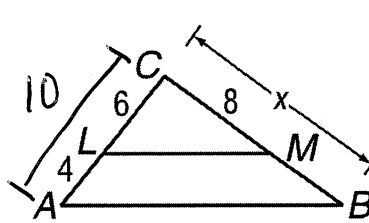
9. Find the value of x in the triangle below.



$$\sin x = \frac{12}{16}$$

$$x = 48.6^\circ$$

10. Find x so that $\overline{LM} \parallel \overline{AB}$.



$$\frac{6}{8} = \frac{10}{x}$$

$x = 13.\overline{3}$

11. If $m\angle 1 = 3x - 2$ and $m\angle 2 = 2x + 7$,

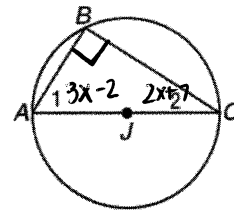
a. find x . $x = 17$

b. find $m\angle 1$ 49°

d. find $m\widehat{AB}$ 82°

c. find $m\angle 2$ 41°

e. find $m\widehat{BC}$ 98°



All Δ 's = 180°

$$3x - 2 + 2x + 7 + 90 = 180$$

$$5x + 95 = 180$$

Geometry B

11.5 Surface Area and Volumes of Spheres

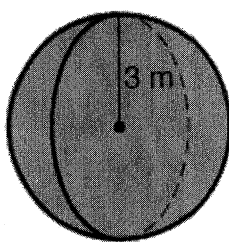
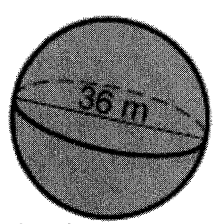
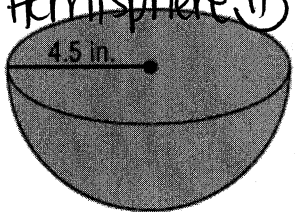
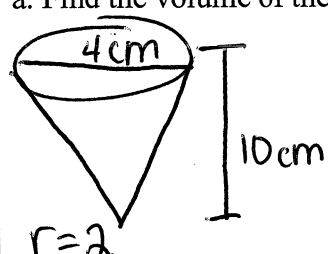
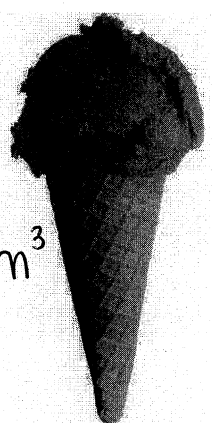
Name _____

Hour _____ Date _____

ASSIGNMENT

For #1-4, find the indicated values.

Round values to the nearest hundredth if necessary.

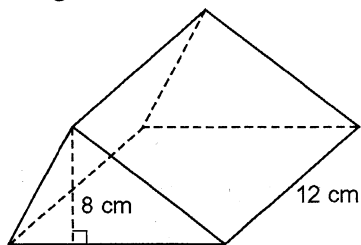
<p>1.  $SA = 4\pi r^2$ $V = \frac{4}{3}\pi r^3$</p> <p>Surface Area = $36\pi \approx 113.1 \text{ m}^2$ Volume = $36\pi \approx 113.1 \text{ m}^3$</p>	<p>2.  $SA = 4\pi r^2$ $V = \frac{4}{3}\pi r^3$ $r = 18$</p> <p>Surface Area = $1296\pi \approx 4071.5 \text{ m}^2$ Volume = $7776\pi \approx 24429.02 \text{ m}^3$</p>
<p>3. Hemisphere.  $V = \frac{2}{3}\pi r^3$</p> <p>Volume = $60.75\pi \approx 190.85 \text{ in}^3$</p>	<p>4. A sphere has a volume of $288\pi \text{ in}^3$. Find the radius of the sphere.</p> <p>$V = \frac{4}{3}\pi r^3$ $288\pi = \frac{4}{3}\pi r^3$ $216 = r^3$ Volume = <u>6 in.</u></p>
<p>5. Suppose a sugar cone is 10 centimeters deep and has a diameter of 4 centimeters. A spherical scoop of ice cream with a diameter of 4 centimeters rest on top of the cone.</p>	
<p>a. Find the volume of the cone.</p>  $V = \frac{1}{3}\pi r^2 h$ $r = 2$ Volume = $13.3\pi \approx 41.89 \text{ cm}^3$	<p>b. Find the volume of the scoop of ice cream.</p> <p>$V = \frac{4}{3}\pi r^3$ $r = 2$</p>  Volume = $10.6\pi \approx 33.51 \text{ cm}^3$
<p>c. If all the ice cream melts into the cone, will the cone overflow? <u>no</u></p>	
<p>d. If the cone does not overflow, what percent of the cone will be filled?</p> <p>$\frac{33.51}{41.89} = 0.7999 \approx 80\% \text{ filled}$</p>	

Review:

6. Find the volume of the figure below.

$$V = Bh$$

$$= 60(12)$$



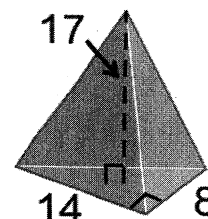
$$B = \frac{1}{2}bh = 60 \text{ cm}^2$$

$$\text{Volume} = 720 \text{ cm}^3$$

7. Find the volume of the figure below.

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

$$= \frac{1}{3}(56)17$$



$$B = \frac{1}{2}bh = 56$$

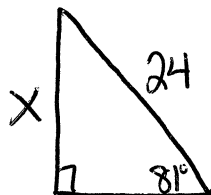
$$\text{Volume} = 317.\bar{3} \text{ in}^3$$

8. A car has a length of 8 feet and a width of 5.2 feet. If the width of a model car is 10 inches, what is the length of the model?

$$\frac{8}{5.2} = \frac{x}{10}$$

$$x = 15.38 \text{ ft.}$$

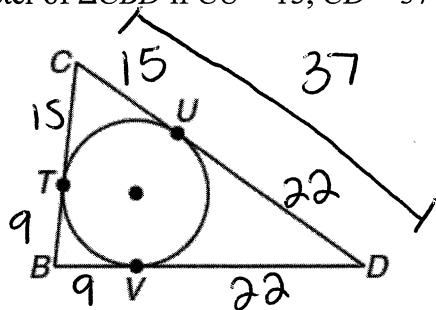
9. A ladder leaning against a building makes an angle of 81° with the ground. If the ladder is 24 feet long, how far up the building will the ladder reach? Round to the nearest tenth.



$$\sin 81^\circ = \frac{x}{24}$$

$$x = 23.7 \text{ ft.}$$

10. Find the perimeter of $\triangle CBD$ if $CU = 15$, $CD = 37$ and $TB = 9$.



$$P = 92 \text{ in.}$$

ASSIGNMENT

Find the volume of each figure. Round values to 2 decimal places if necessary.

1.

h = 9 cm

← Hemisphere $\frac{2}{3}\pi r^3$

← Cylinder $\pi r^2 h$

Hemi + Cyl
261.8 + 706
Volume = 967.8 cm³

2.

11 in.

1 in.

← hemisphere ← cylinder ← hemisphere

2 hemispheres = 1 full sphere \cup
sphere + cylinder
 $\frac{4}{3}\pi r^3 + \pi r^2 h$
4.19 + 34.56
Volume = 38.75 in³

3.

10 cm

8 cm

8 cm

← top box $V = lwh$
 $10(8)(8)$

← bottom box $V = lwh$
 $= 4(3)(2)$

Volume = 184 cm³

4.

2 in.

8 in.

5

13 in.

$V_{\text{cone}} + V_{\text{cylinder}}$
 $\frac{1}{3}\pi r^2 h + \pi r^2 h$
20.94 + 100.53
Volume = 121.47 in³

5.

4 in.

8 in.

10 in.

$V_{\text{cone}} + V_{\text{cone}}$
 $\frac{1}{3}\pi r^2 h + \frac{1}{3}\pi r^2 h$
134.04 + 167.55
Volume = 301.59 in³

6.

6 cm

6 cm

3 cm

5 cm

6 cm

3 cm

$V_{\text{sq. pyr}} = \frac{1}{3} Bh$
 $= \frac{1}{3} (6)(3) \cdot (6)$

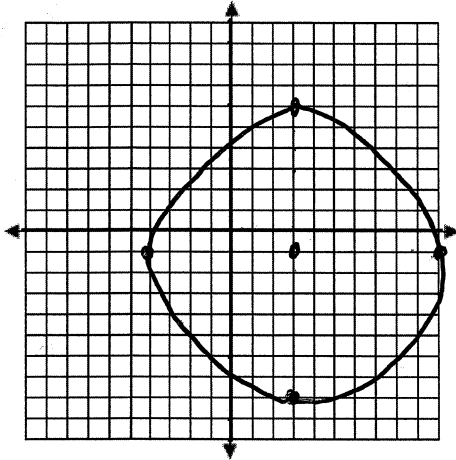
$V_{\text{box}} = Bh = lwh$
 $5(3)(6)$

Volume = 126 cm³

For 7 and 8, find the center and radius of each circle. Then graph the circle.

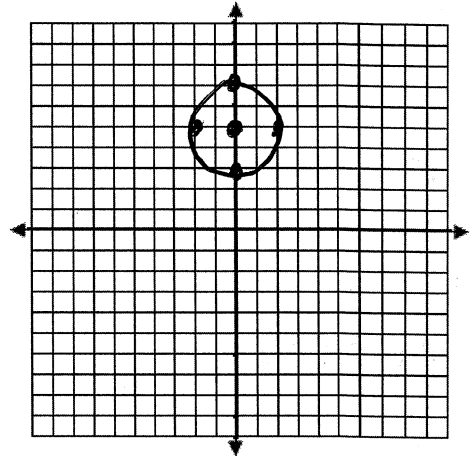
7. $(x - 3)^2 + (y + 1)^2 = 49$

center: $(3, -1)$ radius: 7



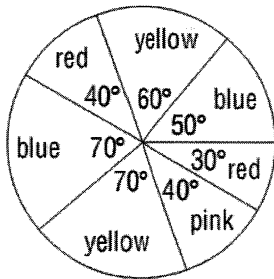
8. $x^2 + (y - 5)^2 = 4$

center: $(0, 5)$ radius: 2



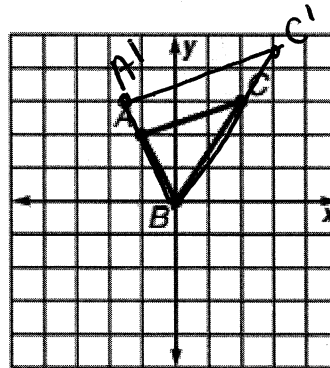
9. Find the area of the pink sector in the region below. The diameter of the circle is 18 cm.

$r = 9 \text{ cm}$



$\frac{40}{360} \cdot \pi 9^2 = 28.27 \text{ cm}^2$

10. Draw triangle ABC under a dilation with a scale factor of 1.5. Give the coordinates of the image.



$A'(-1.5, 3)$

$B'(0, 0)$

$C'(3, 4.5)$

$A(-1, 2) \times 1.5$

$B(0, 0) \times 1.5$

$C(2, 3) \times 1.5$

Geometry B

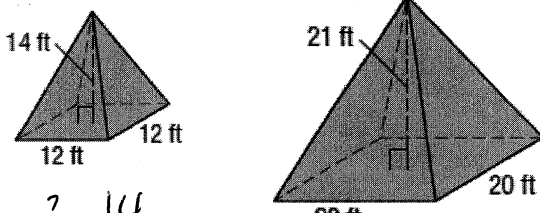
11.7 Volumes and Surfaces Areas of Similar Solids

Name _____

Hour _____ Date _____

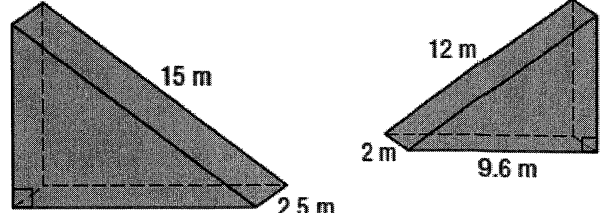
ASSIGNMENT

For #1-6, determine whether each pair of solids is *congruent*, *similar*, or *neither*.

1. 

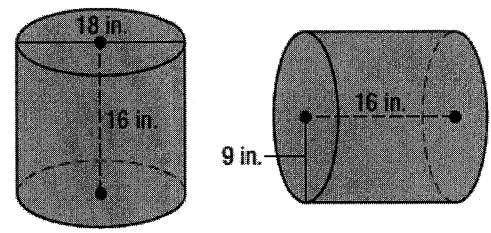
$\frac{12}{20} \stackrel{?}{=} \frac{14}{21}$
 $0.6 \stackrel{?}{=} 0.66$

Neither

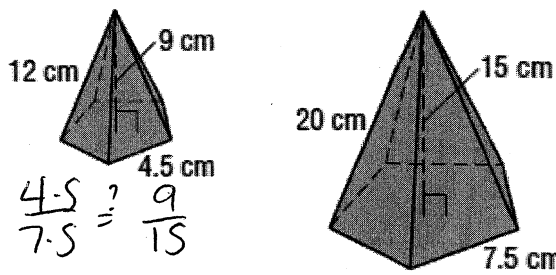
2. 

$\frac{15}{12} \stackrel{?}{=} \frac{2.5}{2} \stackrel{?}{=} \frac{12}{9.6}$
 $1.25 \stackrel{?}{=} 1.25 \stackrel{?}{=} 1.25$

Similar

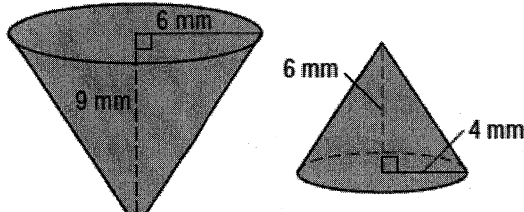
3. 

Congruent

4. 

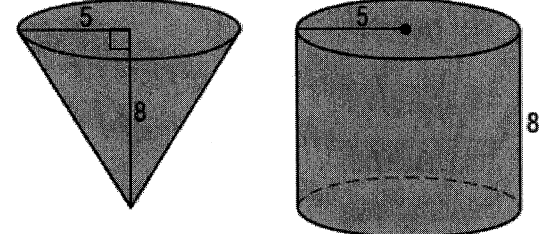
$\frac{12}{20} \stackrel{?}{=} \frac{4.5}{7.5} \stackrel{?}{=} \frac{9}{15}$
 $0.6 \stackrel{?}{=} 0.6 = 0.6$

Similar

5. 

$\frac{6}{4} \stackrel{?}{=} \frac{9}{6}$
 $1.5 \stackrel{?}{=} 1.5$

Similar

6. 

Neither (diff. shapes)

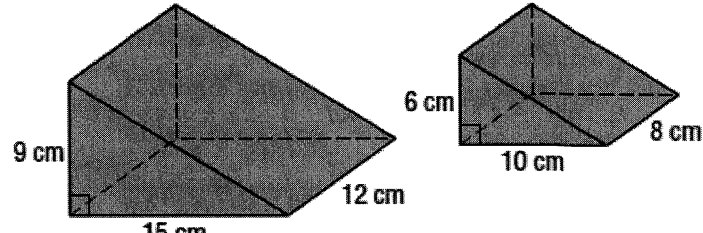
7. Refer to the following similar prisms.

a. Find the scale factor of the two prisms.
 $\frac{9}{6} = \frac{3}{2}$ or 3:2

b. Find the ratio of the surface areas.
 $3^2 : 2^2 = 9 : 4$

c. Find the ratio of the volumes.
 $3^3 : 2^3 = 27 : 8$

d. Suppose the volume of the larger prism is 810 cm^3 . Using the ratio of the volumes and not the formula for the volume of a prism, find the volume of the smaller prism.

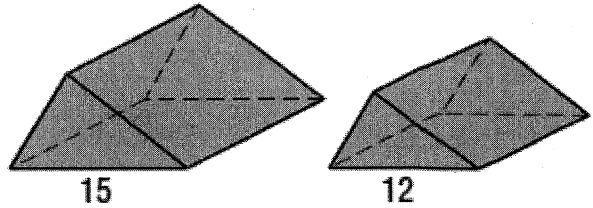


$\frac{27}{8} = \frac{810}{x}$ $x = 240 \text{ cm}^3$

8. Refer to the following similar prisms.

a. If the height of the larger prism is 20 units, what is the height of the smaller prism?

$$\frac{15}{12} = \frac{20}{x} \quad x = 16 \text{ un.}$$



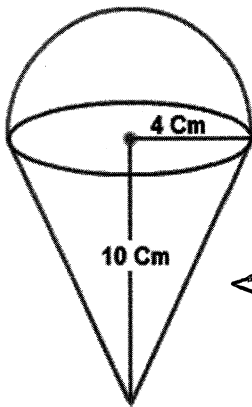
b. If the volume of the larger prism is 1200 units³, what is the volume of the smaller prism?

$$\frac{15^3}{12^3} = \frac{1200}{x} \quad x = 614.4 \text{ un}^3$$

Review:

Find the volume of each figure. Round values to 2 decimal places if necessary.

9.

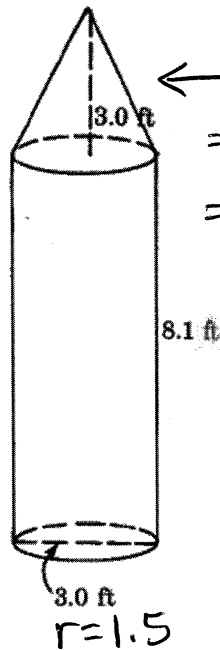


← $V_{\text{hemisphere}}$
 $\frac{2}{3}\pi r^3$
 $= 134.04$

← V_{cone}
 $\frac{1}{3}\pi r^2 h$
 $= 167.55$

Volume = 301.59 cm³

10.



← V_{cone}
 $= \frac{1}{3}\pi r^2 h$
 $= 7.07$

← V_{cylinder}
 $= \pi r^2 h$
 $= 57.26$

Volume = 64.33 ft³