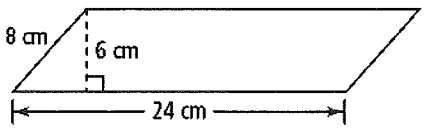
Name_____ Class _____ Date_____

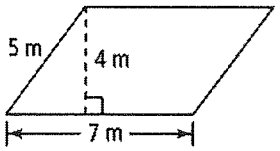
# 6-8 Practice

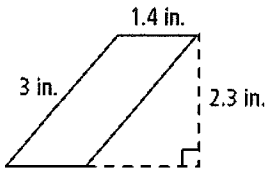
*Form K*

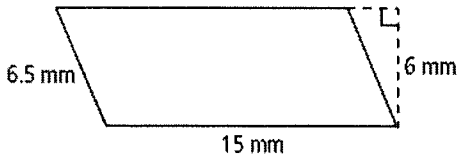
## Areas of Parallelograms and Triangles

**Find the area of each parallelogram.**

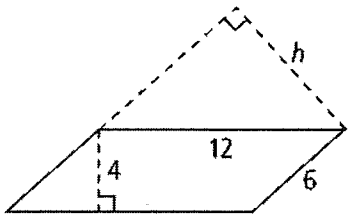
1. 


2. 


3. 


4. 

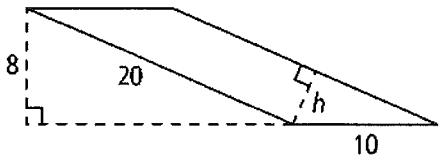

**Find the value of *h* for each parallelogram.**

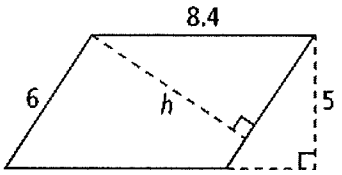
5. 


To start, write the area formula for a parallelogram. Substitute 12 for $b$ and 4 for $h$.

$A = bh$

$= \underline{?} \cdot \underline{?}$

6. 


7. 


8. The area of a triangle is 36 $m^2$ and the height is 9 m. Find the length of the corresponding base.

9. **Algebra** In a parallelogram, a base and a corresponding height are in the ratio 5 : 2. The area is 250 $cm^2$. Find the lengths of the base and the corresponding height. (*Hint:* Use $5x$ for the base and $2x$ for the height of the parallelogram.)

10. A triangle has area 16 $m^2$. List all the possible positive integers that could represent the lengths of its base and height.

11. A classmate drew a rectangle with a height of 8 units and a base of 10 units. What is the area of each figure formed when the rectangle is divided along one of its diagonals?

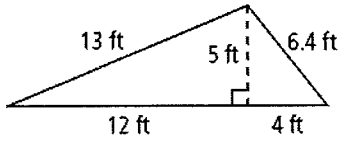
Name_____ Class _____ Date_____

# 6-8 Practice (continued) *Form K*

## Areas of Parallelograms and Triangles

**Find the area of each triangle.**

**12.**

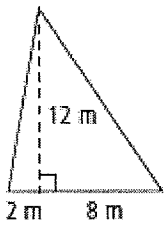



To start, write the area formula for a triangle. Find $b$ and $h$ in the diagram.

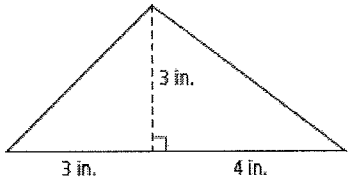
$$A = \frac{1}{2}bh$$

The height $h$ is perpendicular to the base $b$ so $h = 5$ and $b =$ ? + ? = ? .

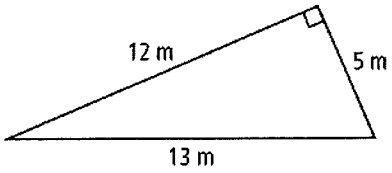
**13.**



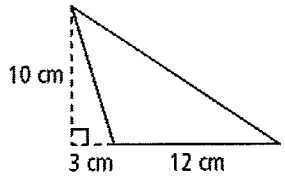

**14.**




**15.**




**16.**




**17. Reasoning** A parallelogram has sides that are 30 in. and 12 in. long. The length of the height corresponding to the 30-in. base is 8 in. What is the length of the height corresponding to the 12-in. base?

**Coordinate Geometry Find the area of a polygon with the given vertices.**

**18.** $A(-3, 1)$, $B(-3, 4)$, $C(7, 1)$, $D(7, 4)$

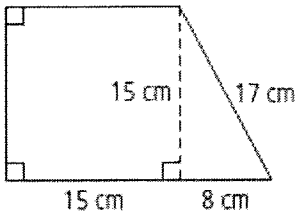
**19.** $A(-1, 1)$, $B(-1, 6)$, $C(2, 6)$

**20.** $A(2, 2)$, $B(5, 5)$, $C(5, 0)$, $D(2, -3)$

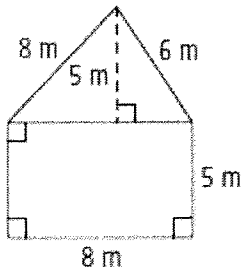
**21.** $A(-5, -2)$, $B(-3, 0)$, $C(-3, -4)$

**Find the area of each figure.**

**22.**




**23.**



Name_____ Class _____ Date_____

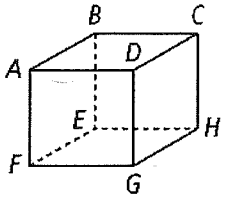
# 6-9 Practice

*Form K*

## Space Figures and Cross Sections

**For each polyhedron, how many vertices, edges, and faces are there? List them.**

**1.**

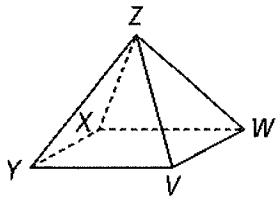



Vertices:

Edges: $\overline{AB}$, $\overline{AF}$, $\overline{AD}$, $\overline{BE}$, $\overline{BC}$, $\overline{CD}$, $\overline{CH}$, $\overline{HE}$, $\overline{HG}$, $\overline{GF}$, $\overline{EF}$, $\overline{DG}$

Faces:

**2.**




Vertices:

Edges: $\overline{XY}$, $\overline{XW}$, $\overline{XZ}$, $\overline{YV}$, $\overline{YZ}$, $\overline{VW}$, $\overline{VZ}$, $\overline{WZ}$

Faces:

**For each polyhedron, use Euler's Formula to find the missing number.**

**3.** Faces: ☐ Edges: 8 Vertices: 5

To start, use Euler's formula, then identify the variables and any given values.

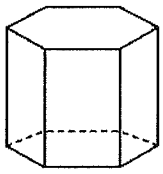
$F + V = E + 2$

**4.** Faces: 6 Edges: ☐ Vertices: 8

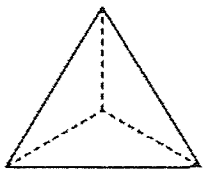
**5.** Faces: 4 Edges: 6 Vertices: ☐

**Verify Euler's Formula for each polyhedron. Then draw a net for the figure and verify Euler's Formula for the two-dimensional figure.**

**6.**



**7.**



**Use Euler's Formula to find the number of vertices in each polyhedron.**

**8.** 6 faces that are all squares

**9.** 1 face that is a hexagon, 6 triangular faces

**10.** 2 faces that are pentagons, 5 rectangular faces

**11. Reasoning** Can a polyhedron have 20 faces, 30 edges, and 13 vertices? Explain.

**12. Reasoning** Is a cylinder a polyhedron? Explain.

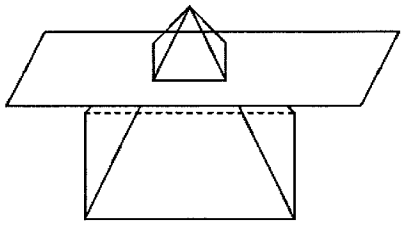
Name_____ Class_____ Date_____

# 6-9 Practice (continued) *Form K*

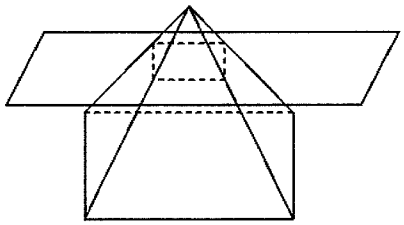
## Space Figures and Cross Sections

**Describe each cross section.**

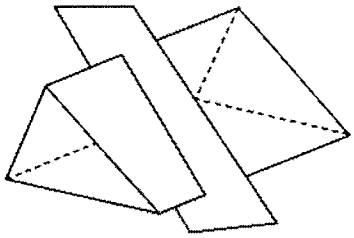
**13.**



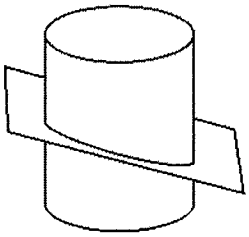
To start, visualize the plane's intersection with the solid.



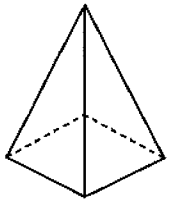
**14.**



**15.**



**Reasoning Can you find a cross section of a square pyramid that forms the figure? Draw the cross section if the cross section exists. If not, explain.**



**16.** isosceles triangle

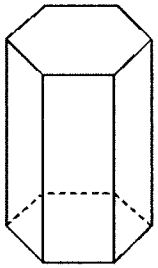
**17.** trapezoid

**18.** scalene triangle

**19.** square

**20.** What is the cross section formed by a plane containing a vertical line of symmetry for the figure at the right?

**21.** What is the cross section formed by a plane that is parallel to the base of the figure at the right?



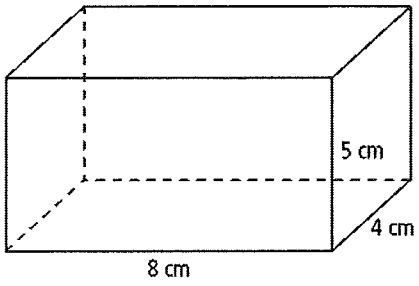
Name_____ Class_____ Date_____

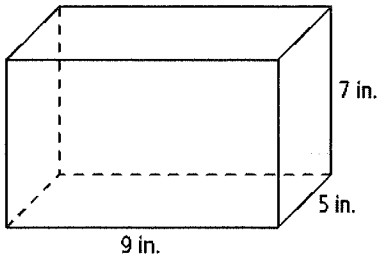
# 6-10 Practice

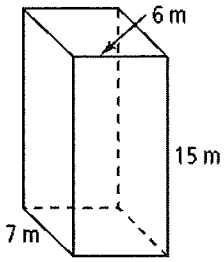
*Form K*

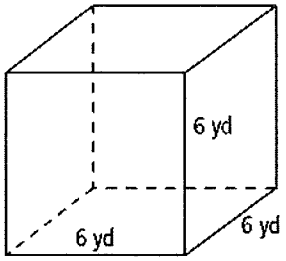
## Volumes of Prisms and Cylinders

**Find the volume of each rectangular prism.**

1. 


2. 


3. 


4. 

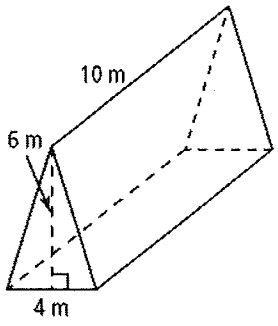

5. The base is a square, 9.6 cm on a side. The height is 6.2 cm.

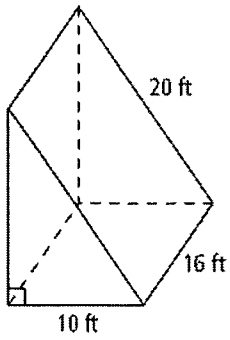
6. The base is a rectangle with length 4.7 cm and width 7.5 cm. The height is 6.1 cm.

**Find the volume of each triangular prism to the nearest tenth.**

To start, use the formula for the volume of a triangular prism and the formula for the base area of a triangle.

$$V = BH, B = \frac{1}{2}bh$$

7. 


8. 


9. The base is a right triangle with a leg of 8 in. and hypotenuse of 10 in. The height of the prism is 15 in. (*Hint:* Use the Pythagorean Theorem to find the length of the other leg.)

10. The base is a 30°-60°-90° triangle with a hypotenuse of 14 m. The height of the prism is 11 m. Find the volume to the nearest tenth.

Name_____ Class _____ Date_____

# 6-10 Practice (continued) *Form K*

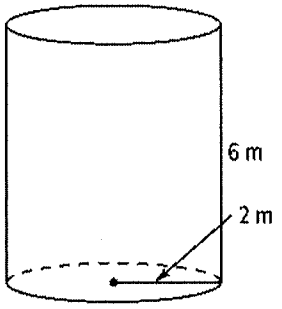
## Volumes of Prisms and Cylinders

**Find the volume of each cylinder in terms of $\pi$ and to the nearest tenth.**

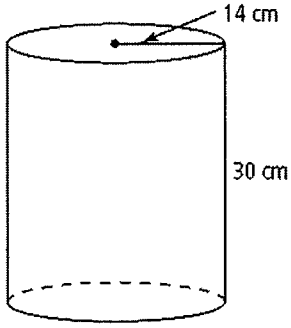
To start, use the formula for the volume of a cylinder, then identify the variables and any given values.

$V = \pi r^2 h$

**11.**




**12.**

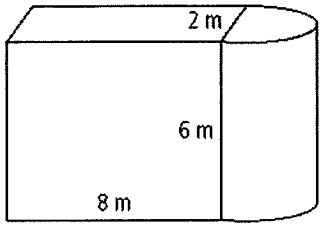



**13.** The radius of the right cylinder is 6.3 cm. The height is 14.5 cm.

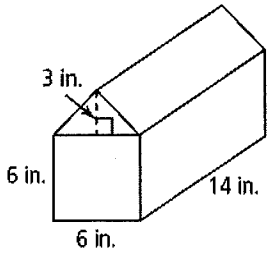
**14.** The diameter of the right cylinder is 16 ft. The height is 7 ft.

**Find the volume of each composite figure to the nearest whole number.**

**15.**

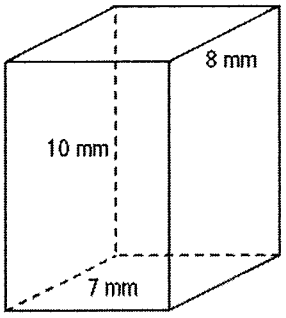



**16.**

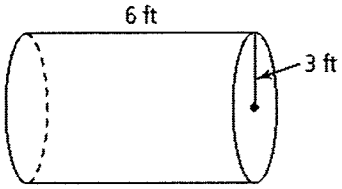



**Find the volume of each figure to the nearest tenth.**

**17.**

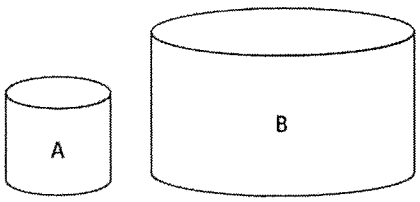



**18.**




**19.** A cylindrical weather satellite has a diameter of 10 ft and a height of 6 ft. What is the volume available for carrying instruments and computer equipment, to the nearest tenth of a cubic foot?

**20.** Can A has a diameter of 6 cm and a height of 6.5 cm. Can B has a diameter of 16 cm and a height of 11.5 cm. What is the difference in volume of the two can types, to the nearest cubic centimeter?



Name_____ Class_____ Date_____

# 6-11 Practice

*Form K*

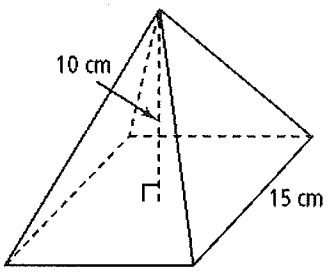
## Volumes of Pyramids and Cones

**Find the volume of each square pyramid. Round to the nearest tenth if necessary.**

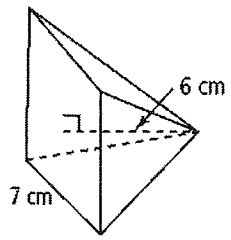
To start, use the formula for the volume of a pyramid. Then find the area of the base of the pyramid.

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

**1.**



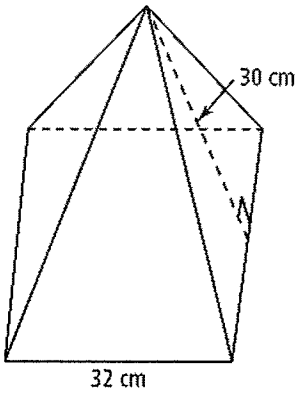

**2.**



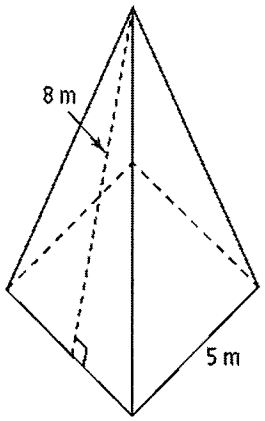

**Find the volume of each square pyramid, given its slant height. Round to the nearest whole number.**

To start, find the height of the pyramid using the Pythagorean Theorem. Then use the formula for the volume of a pyramid.

**3.**




**4.**

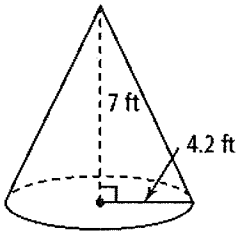



**5.** The base of a pyramid is a square, 24 cm on a side. The height is 13 cm. Find the volume.

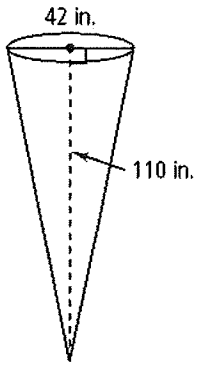
**6.** The base of a pyramid is a square, 14 cm on a side. The height of the pyramid is 25 cm. Find the volume to the nearest whole number.

**Find the volume of each cone in terms of $\pi$ and also rounded as indicated.**

**7.** nearest cubic foot




**8.** nearest cubic inch




**9.** The base has a radius of 8 cm and a height of 5 cm. Round to the nearest cubic centimeter.

**10.** The base has a diameter of 20 m and a height of 12.6 m. Round to the nearest cubic meter.

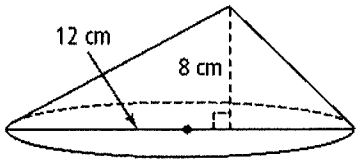
Name_____ Class_____ Date_____

# 6-11 Practice (continued) *Form K*

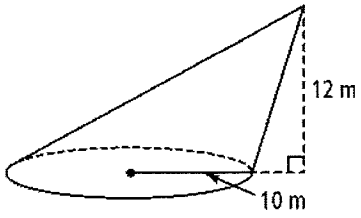
## Volumes of Pyramids and Cones

**Find the volume of each figure to the nearest whole number.**

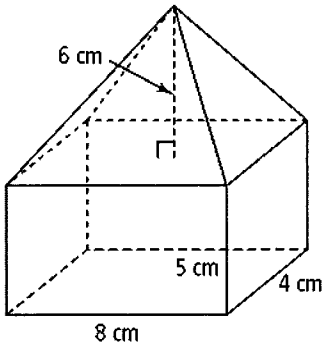
**11.**




**12.**




**13.**

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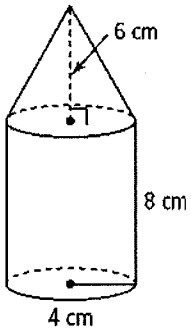


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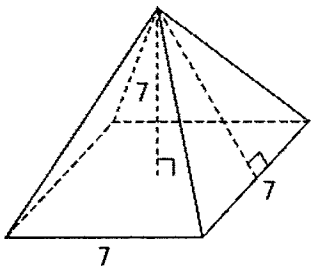
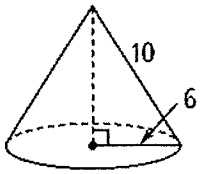



**16.**




**17.** One right circular cone is set inside a larger right circular cone. Find the volume of the space between the cones if the diameter of the inside cone is 9 in., the diameter of the outside cone is 15 in., and the height of both is 8 in. Round to the nearest tenth.

**18.** The Pyramid of Khufu is a square pyramid which had a side length of about 230 m and a height of about 147 m when it was completed. The Pyramid of Khafre had a side length of about 215 m and a height of about 144 m when it was completed. What was the approximate difference in the volume of the two pyramids upon completion?