

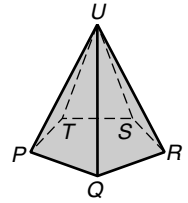
**LESSON**

**Practice A**

**10-1 Solid Geometry**

For Exercises 1–4, match the given parts of the figure to the names.

- |                 |                     |
|-----------------|---------------------|
| 1. vertex _____ | a. triangle $PUT$   |
| 2. edge _____   | b. point $T$        |
| 3. face _____   | c. pentagon $PQRST$ |
| 4. base _____   | d. segment $PU$     |



Classify each figure. Name the vertices, edges, and bases.

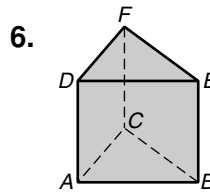


Type of figure: \_\_\_\_\_

Vertices: \_\_\_\_\_

Edges: \_\_\_\_\_

Bases: \_\_\_\_\_



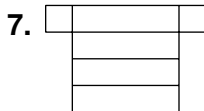
Type of figure: \_\_\_\_\_

Vertices: \_\_\_\_\_

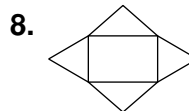
Edges: \_\_\_\_\_

Bases: \_\_\_\_\_

Tell what kind of three-dimensional figure can be made from the given net.

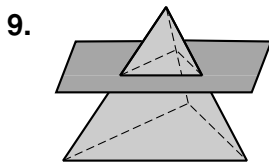


\_\_\_\_\_

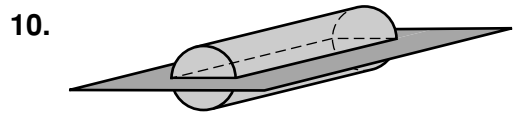


\_\_\_\_\_

Tell what kind of shape each cross section makes.

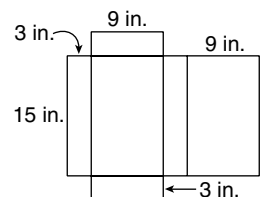


\_\_\_\_\_



\_\_\_\_\_

11. Soren cut several edges of a cereal box and then unfolded the box so it looks like this. Draw the box as it originally appeared and label the side lengths.



**LESSON 10-1 Practice A**  
**Solid Geometry**

For Exercises 1–4, match the given parts of the figure to the names.

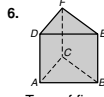
- |                           |                          |
|---------------------------|--------------------------|
| 1. vertex <u>  b  </u>    | a. triangle <i>PUT</i>   |
| 2. edge <u>  d  </u>      | b. point <i>T</i>        |
| 3. face <u>  a or c  </u> | c. pentagon <i>PQRST</i> |
| 4. base <u>  c  </u>      | d. segment <i>PU</i>     |



Classify each figure. Name the vertices, edges, and bases.

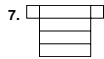


Type of figure:   cylinder    
Vertices:   none    
Edges:   none    
Bases:   ⊙D and ⊙E  



Type of figure:   triangular prism    
Vertices:   A, B, C, D, E, and F    
Edges:   AB, AC, BC, AD, BE, CF, DE, DF, and EF    
Bases:   △ABC and △DEF  

Tell what kind of three-dimensional figure can be made from the given net.

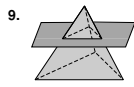


  rectangular prism  

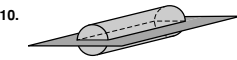


  rectangular pyramid  

Tell what kind of shape each cross section makes.



  triangle  



  rectangle  

11. Soren cut several edges of a cereal box and then unfolded the box so it looks like this. Draw the box as it originally appeared and label the side lengths.

Possible answer:



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**LESSON 10-1 Practice C**  
**Solid Geometry**

A sphere is a three-dimensional figure bounded by all the points a fixed distance from a central point. Examples of a sphere include a globe and a basketball.

1. Name the two possible geometric figures that can result from the intersection of a plane and a sphere.

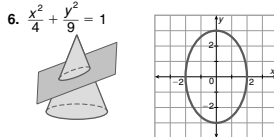
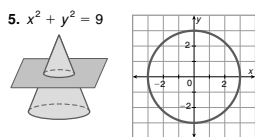
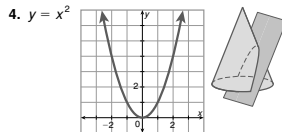
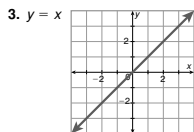
  a circle or a point  

2. Tell whether a sphere has vertices, edges, faces, or bases. Name the two things that define a sphere.

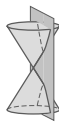
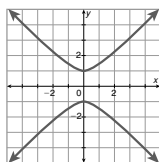
Possible answer:   No, a sphere has no vertices, edges, faces, or bases.  

  A point (center) and a radius (distance) define a sphere.  

A conic section is the intersection of a plane and a cone (or double cone). Many conic sections can be modeled by equations in  $x$ ,  $y$ ,  $x^2$ , and  $y^2$ . First graph each equation. Then sketch a plane and a cone so that their intersection has the same shape as the graph of the equation. (Hint: Sketch a double cone in Exercise 7.)



7.  $y^2 - x^2 = 1$  (Hint: Remember that  $y^2 = 1$  has two solutions.)



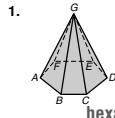
5

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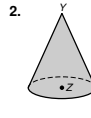
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**LESSON 10-1 Practice B**  
**Solid Geometry**

Classify each figure. Name the vertices, edges, and bases.



  hexagonal pyramid    
vertices:   A, B, C, D, E, F, and G    
edges:   AB, BC, CD, DE, EF, FA, AG, BG, CG, DG, EG, FG    
base:   hexagon ABCDEF  



  cone    
vertices:   Y    
edges:   none    
base:   ⊙Z  

Name the type of solid each object is and sketch an example.

3. a shoe box



  rectangular prism  

4. a can of tuna

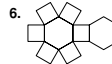


  cylinder  

Describe the three-dimensional figure that can be made from the given net.

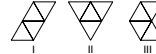


  cylinder  



  hexagonal prism  

7. Two of the nets below make the same solid. Tell which one does not.   III  



Describe each cross section.



  circle  



  rectangle  

10. After completing Exercises 8 and 9, Lloyd makes a conjecture about the shape of any cross section parallel to the base of a solid. Write your own conjecture.

Possible answer:   If a cross section intersects a solid parallel to a base, then the cross section has the same shape as the base.  

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**LESSON 10-1 Practice C**  
**Solid Geometry**

A sphere is a three-dimensional figure bounded by all the points a fixed distance from a central point. Examples of a sphere include a globe and a basketball.

1. Name the two possible geometric figures that can result from the intersection of a plane and a sphere.

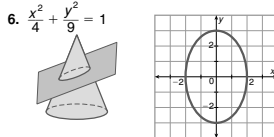
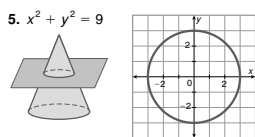
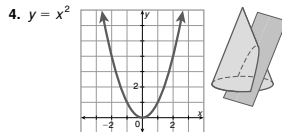
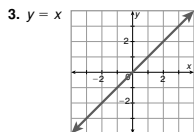
  a circle or a point  

2. Tell whether a sphere has vertices, edges, faces, or bases. Name the two things that define a sphere.

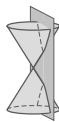
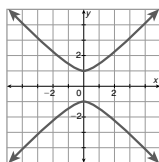
Possible answer:   No, a sphere has no vertices, edges, faces, or bases.  

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A conic section is the intersection of a plane and a cone (or double cone). Many conic sections can be modeled by equations in  $x$ ,  $y$ ,  $x^2$ , and  $y^2$ . First graph each equation. Then sketch a plane and a cone so that their intersection has the same shape as the graph of the equation. (Hint: Sketch a double cone in Exercise 7.)



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**LESSON 10-1 Reteach**  
**Solid Geometry**

Three-dimensional figures, or solids, can have flat or curved surfaces.

Prisms and pyramids are named by the shapes of their bases.

Each flat surface is called a **face**.

An **edge** is the segment where two faces intersect.

A **vertex** is the point where three or more faces intersect. In a cone, it is where the curved surface comes to a point.

Solids			
Prisms	Pyramids	Cylinder	Cone
triangular prism    rectangular prism	triangular pyramid    rectangular pyramid	Neither cylinders nor cones have edges.	

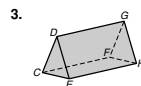
Classify each figure. Name the vertices, edges, and bases.



  triangular pyramid; vertices: Q, R, S, T; edges: QR, QS, QT, RS, ST, TR; base: △QST  



  cylinder; vertices: none; edges: none; bases: ⊙A, ⊙B  



  triangular prism; vertices: C, D, E, F, G, H; edges: CD, DE, EC, FG, GH, HF, CF, DG, EH; bases: △CDE, △FGH  



  cone; vertex: M; edges: none; base: ⊙L  

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