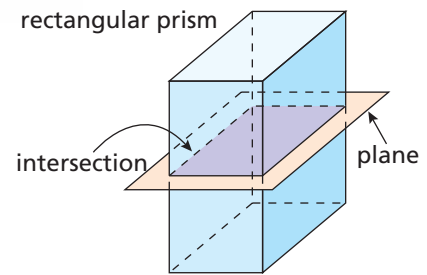


Extension 9.5 Cross Sections of Three-Dimensional Figures

Key Vocabulary

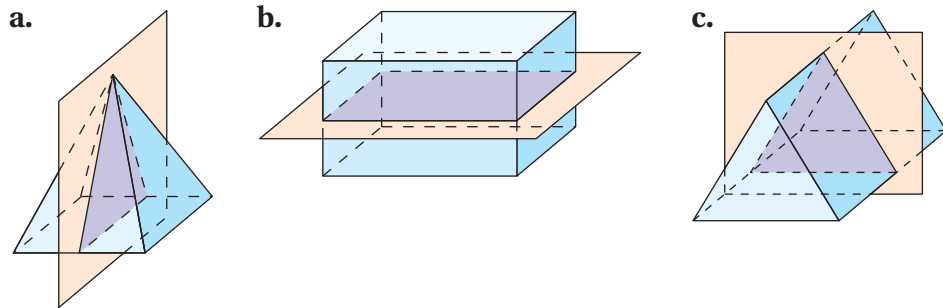
cross section, p. 388

Consider a plane “slicing” through a solid. The intersection of the plane and the solid is a two-dimensional shape called a **cross section**. For example, the diagram shows that the intersection of the plane and the rectangular prism is a rectangle.



EXAMPLE 1 Describing the Intersection of a Plane and a Solid

Describe the intersection of the plane and the solid.



- The intersection is a triangle.
- The intersection is a rectangle.
- The intersection is a triangle.

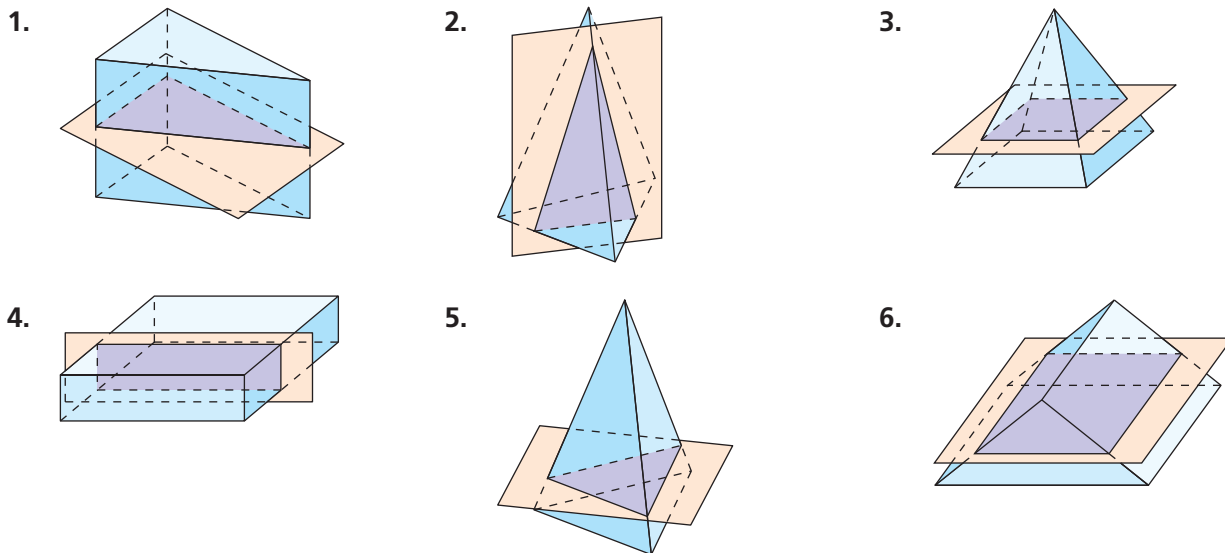
Geometry

In this extension, you will

- describe the intersections of planes and solids.

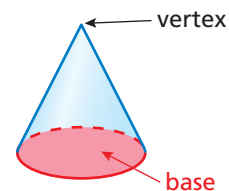
Practice

Describe the intersection of the plane and the solid.



- REASONING** A plane that intersects a prism is parallel to the bases of the prism. Describe the intersection of the plane and the prism.

Example 1 shows how a plane intersects a polyhedron. Now consider the intersection of a plane and a solid having a curved surface, such as a cylinder or cone. As shown, a *cone* is a solid that has one circular base and one vertex.



EXAMPLE 2 Describing the Intersection of a Plane and a Solid

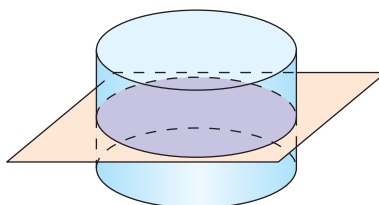
Math Practice

Analyze Givens

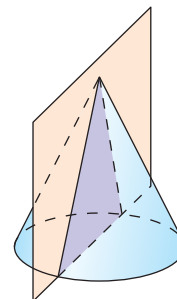
What solid is shown? What are you trying to find? Explain.

Describe the intersection of the plane and the solid.

a.



b.

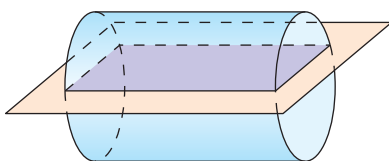


- a. The intersection is a circle.
- b. The intersection is a triangle.

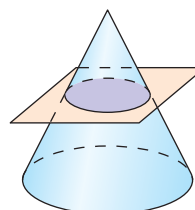
Practice

Describe the intersection of the plane and the solid.

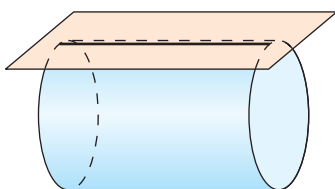
8.



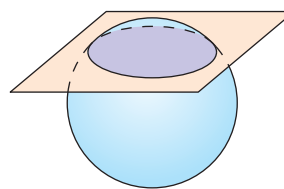
9.



10.



11.



Describe the shape that is formed by the cut made in the food shown.

12.



13.



14.



15. **REASONING** Explain how a plane can be parallel to the base of a cone and intersect the cone at exactly one point.