Investigation

Space Geometry

Step 1 Make a sketch or use physical objects to demonstrate each statement in the list below.

Step 2 Work with your group to determine whether each statement is true or false. If the statement is false, draw a picture and explain why it is false.

1. For any two points, there is exactly one line that can be drawn through them.
2. For any line and a point not on the line, there is exactly one plane that can contain them.
3. For any two lines, there is exactly one plane that contains them.
4. If two coplanar lines are both perpendicular to a third line in the same plane, then the two lines are parallel.
5. If two planes do not intersect, then they are parallel.
6. If two lines do not intersect, then they are parallel.
7. If a line is perpendicular to two lines in a plane, and the line is not contained in the plane, then the line is perpendicular to the plane.

Lesson 1.8 • Space Geometry

Name _____ Period _____ Date _____

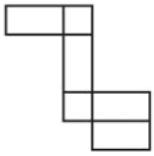
For Exercises 1 and 2, draw each figure.

1. A prism with a rectangular base.

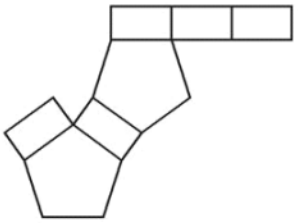
2. A cylinder with base diameter greater than height.

For Exercises 3 and 4, sketch the three-dimensional figure formed by folding each net into a solid. Name the solid.

3.

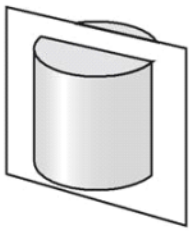


4.

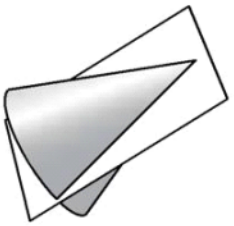


For Exercises 5 and 6, sketch the section formed when each solid is sliced by the plane as shown.

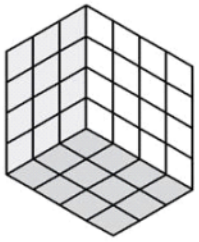
5.



6.



7. The prism below is built with 1-cm cubes. How many cubes are completely hidden from sight, as seen from this angle?



8. Find the lengths of x and y.