Geometry
Unit: Geometry Introduction
Section: Basic Elements of Geometry

Review Worksheet Key

1. Define the following. In your definition, describe what notation is used to write it.

a. Point
A point is a fixed location in space, which can be defined using (x, y). It has no width, length, or thickness. Capital letters are used to name points and a dot is drawn to show where a point is located.

b. Line
A line is made up of infinitely many points extending indefinitely in two directions. Lines do not have any width or thickness, they only have length. We can either name a line using two capital letters with a two sided arrow over them, or the script lower case letter that names the line.

c. Line Segment
A line segment is made up of infinitely many points, but has endpoints and stops at these endpoints. Line segments do not have any width or thickness, they only have length. We name a line segment using the two capital letters of the endpoints with a short line over them.

d. Plane
A plane is made up of infinitely many points with two dimensions, length and width, but extends indefinitely in these two dimensions. Planes do not have any thickness. We can either name a plane using three capital letters, or the script capital case letter that names the plane.

2. How many points are needed to determine a unique line? How many points are there on a line?
Two points are needed to determine a unique line. There are infinitely many points on a line.

3. How many points are needed to determine a unique plane?
Three points are needed to determine a unique plane.

4. What is the intersection of two lines?
A point.

5. What is the intersection of a plane and a line?
A point

6. What is the intersection of two planes?
A line.

7. Describe how to construct a segment bisector.
To construct a segment bisector:
1. Open the compass to more than half the width of the line segment.
2. Place the compass on one of the endpoints and mark an arc above and below the segment.

3. Without changing the compass width, move the compass to the other endpoint and make arcs above and below the line segment.
4. Connect the arc intersections using a straightedge.