

Name:

Date:

*Geometry: Points, Lines, Planes; Classwork and Homework*

True or False:

1. Two points determine two lines.
2. Two planes always intersect in a line.
3. If two distinct lines intersect, they always intersect at a point.
4. Three points determine a plane.
5. If two planes intersect in a line, then the line is in both planes.
6. Two planes can intersect in a point.
7. It is possible for two lines to lie in the same plane.
8. Three planes can intersect in a point.
9. Two lines are parallel if they do not intersect.
10.  $\overleftrightarrow{KM}$  and  $\overleftrightarrow{MK}$  name the same set of points.

Multiple Choice:

1. The intersection of 2 line segments can be
  - I. a point
  - II. a line segment
  - III. a ray
  - IV. a line

A. I only    B. I and II    C. I and IV    D. all of the above
2. The intersection of 2 distinct rays can be
  - I. a point
  - II. a line segment
  - III. a ray
  - IV. a line

A. I only    B. IV only    C. I, II and III    D. all of the above
3. The intersection of 2 distinct lines can be
  - I. a point
  - II. a line segment
  - III. a ray
  - IV. a line

A. I only    B. IV only    C. I, III and IV    D. all of the above

Questions:

1. What is the difference between:  
a line and a ray?  
a line and a line segment?
2. How many points are on a line?
3. Can a plane and a line ever intersect in two points?
4. If points A, B, & C determine plane D, what do you know about points A, B, & C?

Draw:

1. Line segment AB
2. Line  $l$  and point P such that P is not on line  $l$
3. Points A, B, & C such that they are collinear.
4. Lines  $r$  and  $t$  such that they have no points in common.
5. Points A, B, & C such that they determine a plane

Draw:

1. Plane  $Q$  with a line  $m$  intersecting  $Q$  at point  $E$ .

2. Plane  $Q$  contains lines  $r$  and  $s$  that intersect in point  $P$ .

3. Line  $t$  lies in planes  $P$ ,  $Q$  and  $R$ .

Answers:

"Geometry: Points, Lines, Planes; Segments and Congruence: Classwork and Homework" -

True or False:

1. F
2. T
3. T
4. T
5. T
6. F
7. T
8. T
9. T
10. T

Multiple Choice:

1. A
2. D
3. A

Questions:

1. A line extends without end in two directions, and a ray consists of an endpoint and all points of a line extending in one direction. A line extends without end in two directions, and a line segment of a line includes all points that lie on a line between 2 endpoints.
2. An infinite number of points.
3. Yes, 2 points of a line can lie on a plane and are colinear and coplaner.
4. They are coplaner.

Draw: Student drawings will look different but should model the key concepts.