

Name: \_\_\_\_\_

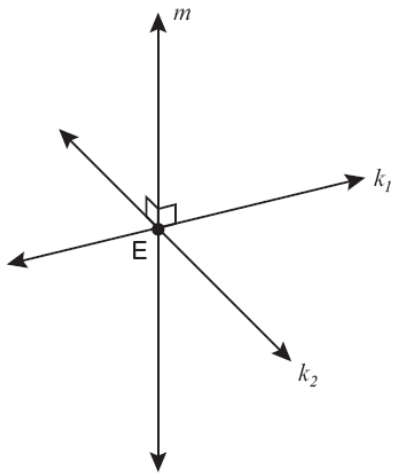
Date: \_\_\_\_\_ Period: \_\_\_\_\_

### Plane Geometry Questions

#### Plane Geometry Questions:

1. If two lines intersect, then only one plane contains both of those lines.
  - a. True
  - b. False
2. If two points lie in a plane, the line joining them also lies in the same plane.
  - a. True
  - b. False
3. Point  $P$  is on line  $m$ . What is the total number of planes that are perpendicular to line  $m$  and pass through point  $P$ ?
  - a. 1
  - b. 2
  - c. 0
  - d. infinite
4. In three-dimensional space, two planes are parallel and a third plane intersects both of the parallel planes. The intersection of the planes is a
  - a. plane
  - b. point
  - c. pair of parallel lines
  - d. pair of intersecting lines
5. Line  $k$  is drawn so that it is parallel to two distinct planes,  $P$  and  $R$ . What must be true about planes  $P$  and  $R$ ?
  - a. Planes  $P$  and  $R$  are skew
  - b. Planes  $P$  and  $R$  are parallel
  - c. Planes  $P$  and  $R$  are perpendicular
  - d. Plane  $P$  intersects plane  $R$  but is not perpendicular to plane  $R$ .
6. If two planes are perpendicular to the same line,
  - a. they are perpendicular
  - b. they are parallel
  - c. they intersect but are not perpendicular
  - d. none of the above

7. Lines  $k_1$  and  $k_2$  intersect at point E. Line  $m$  is perpendicular to lines  $k_1$  and  $k_2$  at point E.



Which statement is *always* true?

- a. Lines  $k_1$  and  $k_2$  are perpendicular
- b. Line  $m$  is parallel to the plane determined by lines  $k_1$  and  $k_2$
- c. Line  $m$  is perpendicular to the plane determined by  $k_1$  and  $k_2$
- d. Line  $m$  is coplanar with lines  $k_1$  and  $k_2$