

Chapter 6: Planes

I. Undefined Terms

- A. Point: _____ in space
 B. Line: consists of _____ and extends forever in _____

1. Types of Lines

- a. _____: same slope; never intersect
 b. _____: intersect and form right angles; slopes are negative reciprocals of each other
 c. _____: intersect but do not form right angles
 d. coincident: _____
 e. skew: _____

C. Plane

1. Definition

- a. _____ surface that _____ in _____

2. Attributes of a Plane

- a. Since it is a _____ it has no _____
 b. Only has 2 dimensions-- _____ & _____
 c. No _____ or _____
 d. Named by _____

e. Appears as



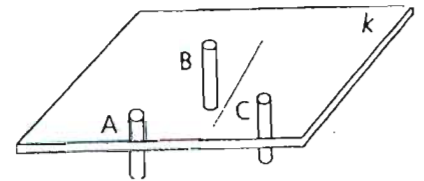
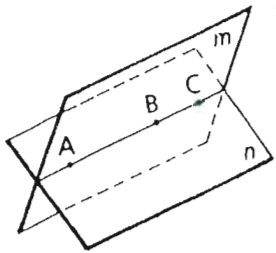
Plane a



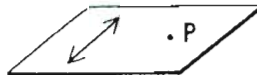
- f. Points & lines may _____ or _____ it
 a. coplanar
 b. noncoplanar

3. Four Ways to Determine a Plane

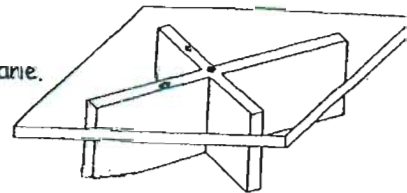
- a. _____ points determine a plane



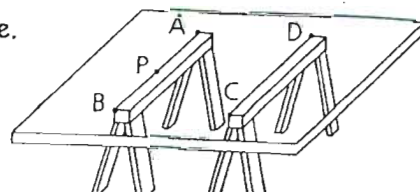
- b. _____ (consisting of 2 points) and a _____ not on the _____ determine a plane



- c. Two _____ determine a plane.



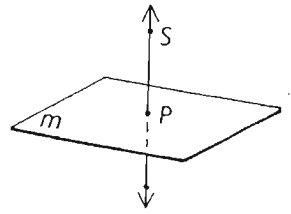
- d. Two _____ lines determine a plane.



II. Postulates Related to Planes

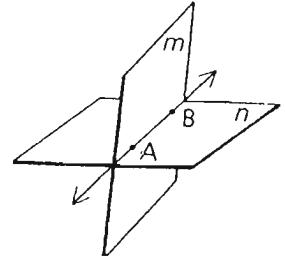
A. If a line intersects a plane, then the intersection is a _____.

1. The point of intersection of the line and the plane is the _____.



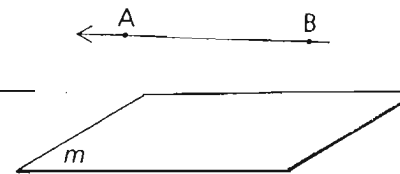
B. If 2 planes intersect, the intersection is exactly _____.

C. If two points lie in a plane, then the _____
_____ lies in the plane.

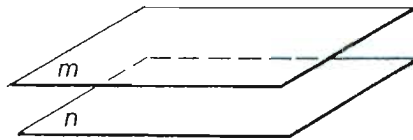


III. Parallel Lines and Planes

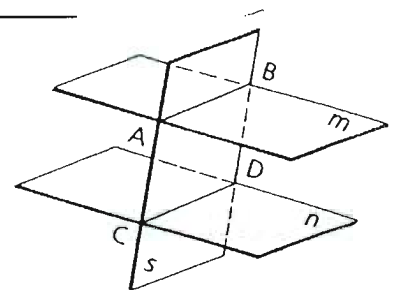
A. A line and a plane are parallel if they _____.



B. Two planes are _____ if they do not _____.



C. If a plane intersects 2 parallel planes, the lines of
are _____.

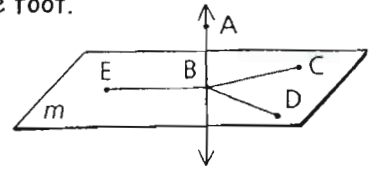


D. If two planes are _____ to the same plane then they are
_____ to each other.

IV. Perpendicular Lines and Planes

A. A line is perpendicular to a plane if it is perpendicular to EVERY ONE of the lines in the plane that pass through its _____.

--must be perpendicular to at least ___ lines that pass through the foot.



B. If a line is _____ to one of two _____ planes, then it is _____ to the other plane as well.

V. Parallel and Perpendicular Relationships

A. If 2 planes are _____ to the same line, they are _____ to each other.

B. If a plane is _____ to one of two parallel lines, it is _____ to the other line as well.

C. If two lines are _____ to the same plane, then they are _____ to each other.