

2.4 Use Postulates and Diagrams

You have already learned four postulates.

- POSTULATE 1 Ruler Postulate
- POSTULATE 2 Segment Addition Postulate
- POSTULATE 3 Protractor Postulate
- POSTULATE 4 Angle Addition Postulate

Point, Line, and Plane Postulates

- POSTULATE 5 Through any two points there exists exactly one line.
- POSTULATE 6 A line contains at least two points.
- POSTULATE 7 If two lines intersect, then their intersection is exactly one point.
- POSTULATE 8 Through any three noncollinear points there exists exactly one plane.
- POSTULATE 9 A plane contains at least three noncollinear points.
- POSTULATE 10 If two points lie in a plane, then the line containing them lies in the plane.
- POSTULATE 11 If two planes intersect, then their intersection is a line.

Interpreting a Diagram

When you interpret a diagram, you can assume information about size or measure only if it is marked.

YOU CAN ASSUME

All points shown are coplanar.

$\angle AHB$ and $\angle BHD$ are a linear pair.

$\angle AHF$ and $\angle BHD$ are vertical angles.

A , H , J , and D are collinear.

\vec{AD} and \vec{BF} intersect at H .

YOU CANNOT ASSUME

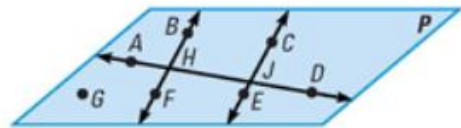
G , F , and E are collinear.

\vec{BF} and \vec{CE} intersect.

\vec{BF} and \vec{CE} do not intersect.

$\angle BHA \cong \angle CIA$

$\vec{AD} \perp \vec{BF}$ or $m\angle AHB = 90^\circ$



PERPENDICULAR FIGURES A line is a **line perpendicular to a plane** if and only if the line intersects the plane in a point and is perpendicular to every line in the plane that intersects it at that point.

In a diagram, a line perpendicular to a plane must be marked with a right angle symbol.

