Geometry
Section 1.5 (Postulates and Theorems Relating Points, Lines, and Planes)
Notes

Postulate:

Up to this point, we have covered five postulates so far. (You may not even realize that we've seen five, and that's fine.) Those postulates are:

1. The Ruler Postulate

2. The Segment Addition Postulate

3. The Protractor Postulate

4. The Angle Addition Postulate

5. The Linear Pair Postulate

Today, we are going to learn five new postulates. Some of these postulates will be familiar in that we have already talked about them—you just didn't know that they were postulates.

Postulate 5

- A line contains at least…
- A plane contains at least…
- Space contains at least…

Postulate 6

Through any two distinct points there is…

Postulate 7

- Through any three points there is…
- Through any three noncollinear points there is…

Postulate 8

If two points are in a plane, then the…

Postulate 9

If two planes intersect, then their…

Theorem:

Theorem 1.1

If two lines intersect, then they intersect…

What is the difference between *one* and *exactly one*?

Theorem 1.2

Through a line and a point not on the line there is…

Theorem 1.3

If two lines intersect, then…

Homework:

- ***1.2 & 1.4 Practice* worksheets**
- **Section 1.5 Written Exercises (p. 25-26) #1-18 (all)**

Even Answers

2. If two lines intersect, then at least one plane contains the lines.
   If two lines intersect, then no more than one plane contains the lines.

4. (a) $\overleftrightarrow{AB}$ is in the plane.
   (b) If two points are in a plane, then the line that contains the points is in that plane.

6. $ABCD$

8. $\overleftrightarrow{CD}$

10. $\overleftrightarrow{AC}$, $\overleftrightarrow{BD}$

12. In the diagram: right/acute/obtuse
    In the box: right/right/right

14. yes

16. yes

18. (a) Through any 3 points, there is at least 1 plane.
    (b) answers will vary…
    (c) Through any 3 points, there is at least 1 plane.
    (d) There are an infinite number of points P on $\overleftrightarrow{AD}$. For each P there exists a plane BCP.