

Name _____ Date: _____

Geometry/Trig 2

Section 1.5: Postulates and Theorems
Relating Points, Lines, Planes

Postulate:

Theorem:

Postulate 1: Ruler Postulate (pg. 12)

The distance between two points equals the absolute value of the difference of their coordinates.

Postulate 2: Segment Addition Postulate (pg. 12)

If B is between A and C, then $AB + BC = AC$.

Postulate 5: (pg. 23)

A line contains *at least* two points; a plane contains *at least* three points **not** all in one line; space contains *at least* four points **not** all in one plane.

Postulate 6: (pg. 23)

Through any two points there is exactly one line.

Postulate 7: (pg. 23)

Through any three points there is *at least* one plane, and through any three **noncollinear** points there is *exactly* one plane.

Postulate 8: (pg. 23)

If two points are in a plane, then the line that contains the points is in that plane.

Postulate 9: (pg. 23)

If two planes intersect, then their intersection is a line.

Theorem 1-1: (pg. 23)

If two lines intersect, then they intersect in *exactly* one point.

Theorem 1-2: (pg. 23)

Through a line and a point not in the line there is *exactly* one plane.

Theorem 1-3: (pg. 23)

If two lines intersect, then *exactly* one plane contains the lines.

Practice Problems

Directions: Each postulate or theorem below is incomplete. Without using your notes, complete each postulate or theorem. Use the word bank to help you (each word may be used more than once or not at all).

line	absolute value	BC
AB	ray	line segment
plane	AC	point

1. Through any three points there is *at least* one _____, and through any three **noncollinear** points there is *exactly* one _____.
2. If two lines intersect, then they intersect at a _____.
3. Through any two points there is exactly one _____.
4. If two planes intersect, then their intersection is a _____.
5. If two points are in a plane, then the line that contains the points is in the _____.
6. A line contains *at least* two _____; a plane contains *at least* three _____ **not** all in one line; space contains *at least* four _____ **not** all in one plane.
7. The distance between two points equals the _____ of the difference of their coordinates.
8. If two lines intersect, then *exactly* one _____ contains both lines.
9. If B is between A and C, then $AB + BC =$ _____.
10. Through a line and a point not in the line there is *exactly* one _____.