5.2 Perpendicular Bisectors

Perpendicular Bisector-

*Perpendicular Bisector Theorem*

If a point lies on the perpendicular bisector of a segment, then it is equidistant from the endpoints of the segment.

Equidistant- “equal distance”

*Converse of the Perpendicular Bisector Theorem*

In a plane, if a point is equidistant from the endpoints of a segment, then it is on the perpendicular bisector of the segment.

*Perpendicular Bisectors in a Triangle:*

How many perpendicular bisectors can there be in a triangle?

3(One to each side)

\*\*\* When 3 or more lines intersect at one point, we call the lines CONCURRENT.\*\*\*

*Point of concurrency*- point of intersection

Point of concurrency of the 3 bisectors of a triangle is called the CIRCUMCENTER.

Circumscribed Circle: A circle that goes through all of the vertices of a figure. The center of a circumscribed circle

*Concurrency of Perpendicular Bisectors of a Triangle Thm*

The 3 bisectors of a triangle are concurrent at a point called the circumcenter that is equidistant to the vertices of a triangle.

Placement of Circumcenter (pg.306)

Acute Triangle- inside the triangle

Obtuse Triangle- outside the triangle

Right Triangle- on the triangle (it will be on the midpoint of the hypotenuse)