5.3 Use Angle Bisectors of Triangles

Angle Bisector-

Angle Bisector Theorem

If a point lies on the bisector of an angle then it is equidistant to the sides of the angle.

Angle Bisector Converse:

If a point is equidistant to sides of an angle then it lies on the bisector of an angle.

\*\*\* Every Triangle has 3 angle bisectors (one to each angle). The 3 Angle Bisectors are concurrent at the INCENTER.

Concurrency of Angle Bisectors of a Triangle Thm

3 Angle Bisectors of a Triangle are concurrent at the incenter which is equidistant to the sides of the triangle.

Incenter- is the center of the inscribed circle of a triangle.

Inscribed Circle- circle that intersects each side exactly one time.

\*\*\*The incenter is ALWAYS inside the triangle no matter what type of triangle it is in.