1. Mark as true or false the following statements. Suppose $\triangle ABC$ and $\triangle DEF$ are such that:
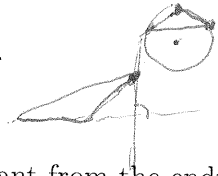
A)   T   (F)   The circumcenter of a triangle always falls inside the triangle.

B)   T   (F)   The orthocenter of a triangle always falls inside the triangle.

C)   T   (F)   The angle bisector of an angle is the set of all points equidistant from the endpoints
of a segment.   *perpendicular*

D)   (T)   F   If two medians of a triangle are congruent, then the triangle is isosceles.
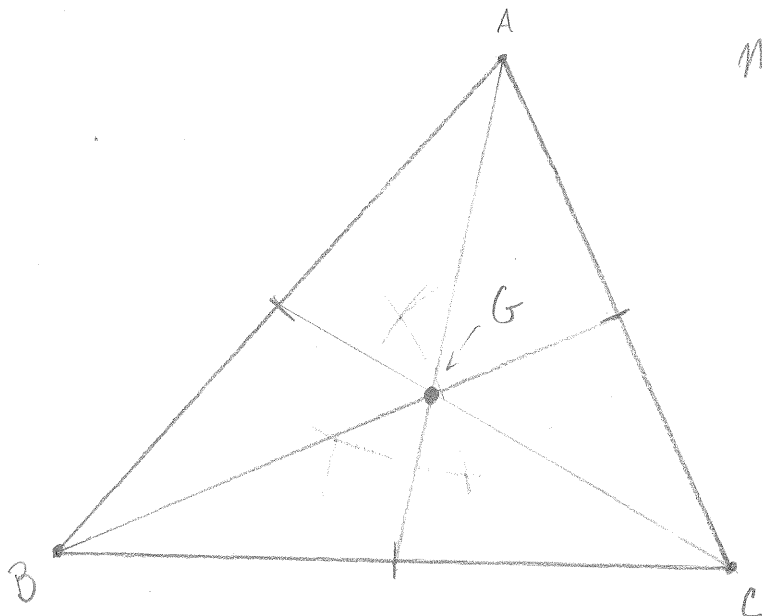
2. Given a triangle with side lengths of $3, 4, 5$ find the circumradius, R.

$3,4,5$ is a right triangle so $K = \frac{1}{2}(3)(4) = 6$ or $K = \sqrt{s(s-a)(s-b)(s-c)} = \sqrt{6(3)(2)(1)}$

$= 6$

Brahmagupta $abc = 4RK \Rightarrow R = \dfrac{3 \cdot 4 \cdot 5}{4 \cdot 6_2} = \boxed{\dfrac{5}{2}}$

3. Construct a triangle ABC and find the centroid G.

Notice, only two medians are required