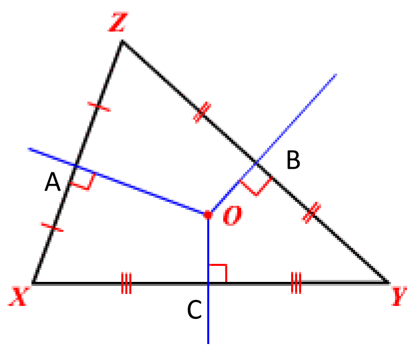
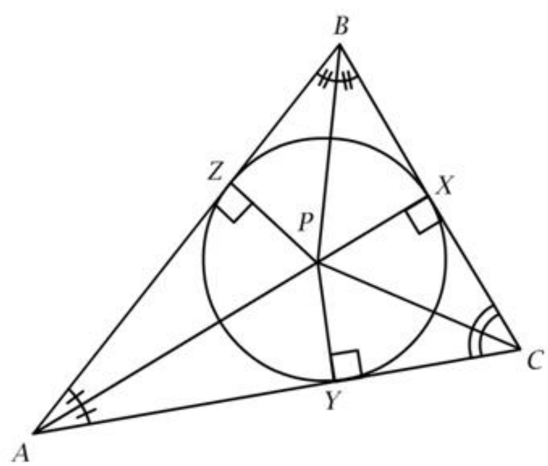
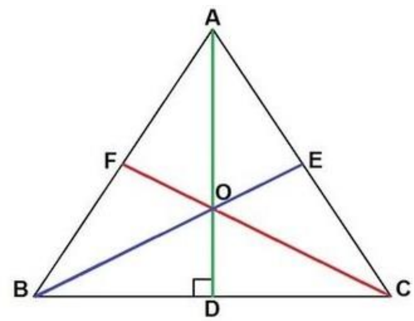
1. Given: O is the circumcenter of ΔXYZ
   Prove: $\overline{OZ} \cong \overline{OX} \cong \overline{OY}$



2. Given: P is the incenter of ΔABC
   Prove: $\overline{PZ} \cong \overline{PX} \cong \overline{PY}$



3. Given: O is the centroid of ΔABC
Prove: $m\overline{OC} = 2(m\overline{OF}),\ m\overline{OB} = 2(m\overline{OE})$ and $m\overline{OA} = 2(m\overline{OD})$



Statements	Reasons
1. O is the centroid of ΔABC	1. Given
2. E is the midpoint of $\overline{AC}$ and F is the midpoint of $\overline{AB}$	2.
3. $\overline{EF}$ is a midsegment of ΔABC	3. Definition of Midsegment
4. $\overline{EF} \parallel \overline{BC}$ and $m\overline{BC} = 2(m\overline{EF})$	4. Triangle Midsegment Theorem
5. $\angle FEB \cong \angle EBC$ and $\angle EFC \cong \angle FCB$	5.
6. $\Delta FOE \sim \Delta BOC$	6. AA Similarity
7. $\frac{BC}{EF} = \frac{OC}{OF} = \frac{OB}{OE}$	7. Definition of Similar Triangles
8. $m\overline{OB} = 2(m\overline{OE}), \overline{OC} = 2(m\overline{OF})$	8.
9. D is the midpoint of $\overline{BC}$	9.
10.	10.
11.	11.
12.	12.
13.	13.
14.	14.