For the six-pointed star at the bottom, find the following:

1. the image of $A$ after a $120^{\circ}$ rotation counterclockwise around $O$
2. the image of $\overline{I K}$ after a $120^{\circ}$ rotation counterclockwise around $O$
3. the image of $\triangle G H I$ after a $120^{\circ}$ rotation counterclockwise around $O$
4. the image of $E$ after a reflection in line $\overleftrightarrow{A G}$
5. the image of $\overline{C D}$ after a reflection in line $\overleftrightarrow{A G}$
6. the image of $\overline{K O}$ after a reflection in line $\overleftrightarrow{A G}$
7. the image of $C$ after a reflection in line $\overleftrightarrow{L F}$
8. the image of $\overline{O E}$ after a reflection in line $\overleftrightarrow{L F}$
9. the image of $\angle G H I$ after a reflection in line $\overleftrightarrow{L F}$

