## Reflection

We all have experienced a reflection, look in the mirror. Pretty simple, right? We will formalize that definition this way.

A reflection in some line $j$ maps every point $P$ into a point $P^{\prime}$, such that:

1. If $\mathbf{P}$ does not lie on $\boldsymbol{j}$, then $\boldsymbol{j}$ is the perpendicular bisector of $\overline{\boldsymbol{P} \boldsymbol{P}^{\prime}}$
2. If P lies on $j$, then $\mathrm{P}^{\prime}$ is the same point as P .



By definition, line $\boldsymbol{k}$ is the perpendicular bisector of $\mathrm{AA}^{\prime}, \mathrm{BB}^{\prime}$ and $\mathrm{CC}^{\prime}$.

That means when we draw our lines they must be perpendicular.

And the distance from point A to line $\boldsymbol{k}=$ the distance from point A' to line $\boldsymbol{k}$.

