Exercise 20: Line segments and Abstract Voronoi diagram (4 Points)
Consider a set $S$ of $n$ disjoint line segments, and let $\mathcal{J}$ be the $\binom{n}{2}$ bisecting curves among $S$. Please prove the bisecting system $(S, \mathcal{J})$ is admissible, i.e., the corresponding Voronoi diagram is an abstract Voronoi diagram.

Exercise 21: Karlsruhe metric (4 Points)
The Karlsruhe metric, also known as the Moscow metric, is a distance measure in a radial city where there is a city center, and roads either circumvent the center or are extended from the center. The distance $d_K(p_1, p_2)$ between two points is $\min(r_1, r_2) \times \delta(p_1, p_2) + |r_1 - r_2|$ if $0 \leq \delta(p_1, p_2) \leq 2$ and $r_1 + r_2$, otherwise, where $(r_i, \psi_i)$ are the polar coordinates of $p_i$ with respect to the center, and $\delta(p_1, p_2) = \min(|\psi_1 - \psi_2|, 2\pi - |\psi_1 - \psi_2|)$ is the angular distance between the two points. Please prove the bisecting curve system in the Karlsruhe metric to be admissible.