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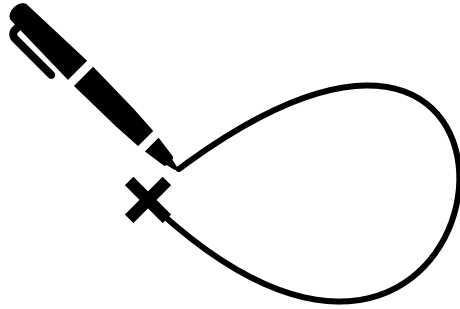
Computational Geometry – Exercise Meeting #1

November 18th, 2021

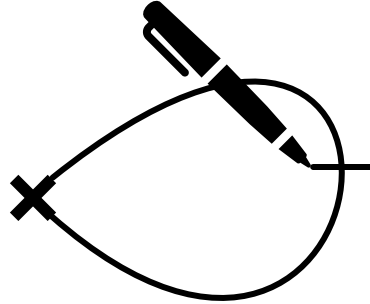
A paper-and-pencil game – Rules



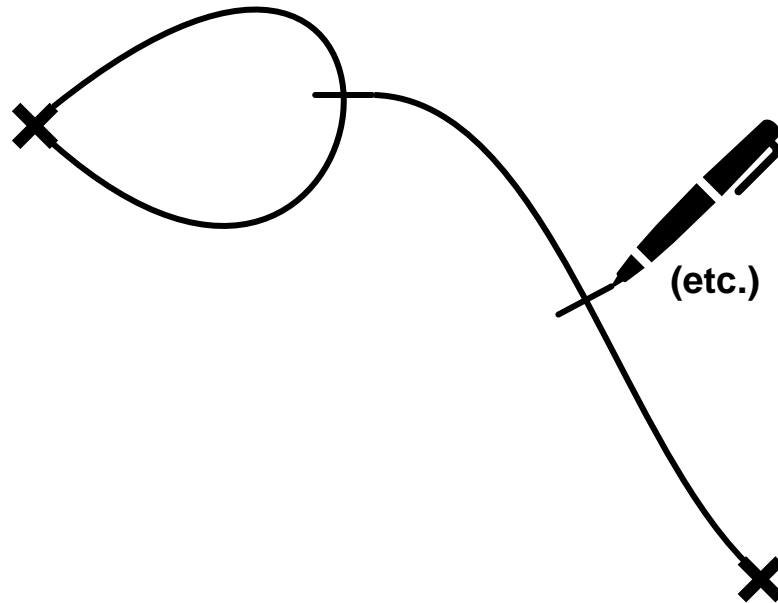
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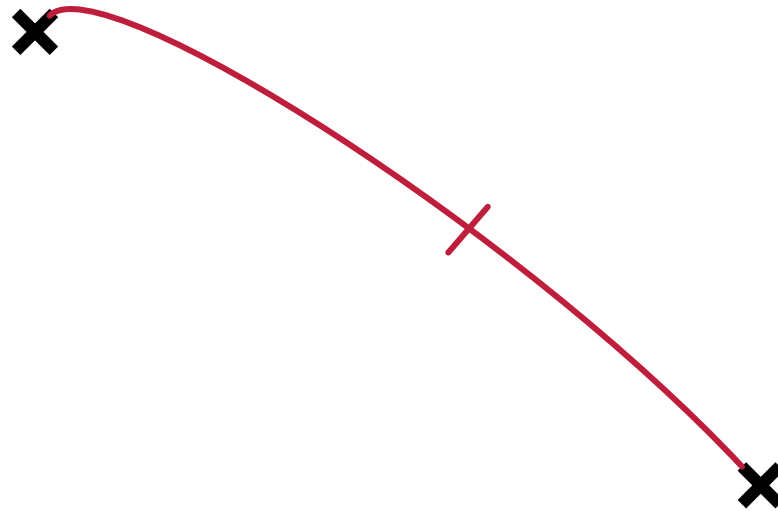
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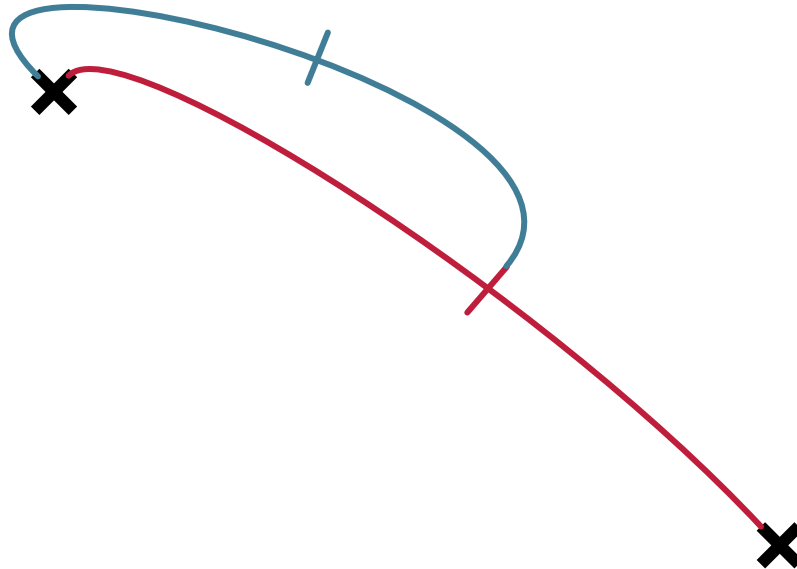
A paper-and-pencil game – Example



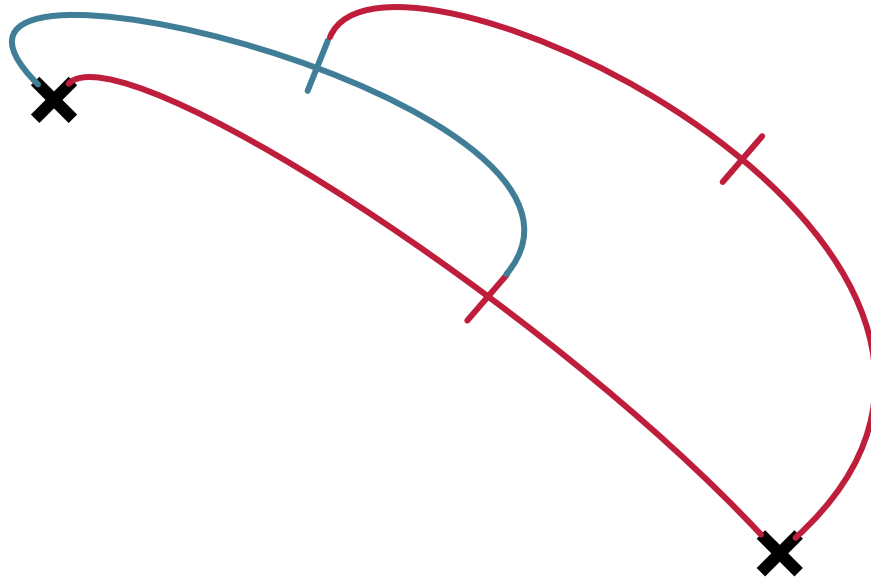
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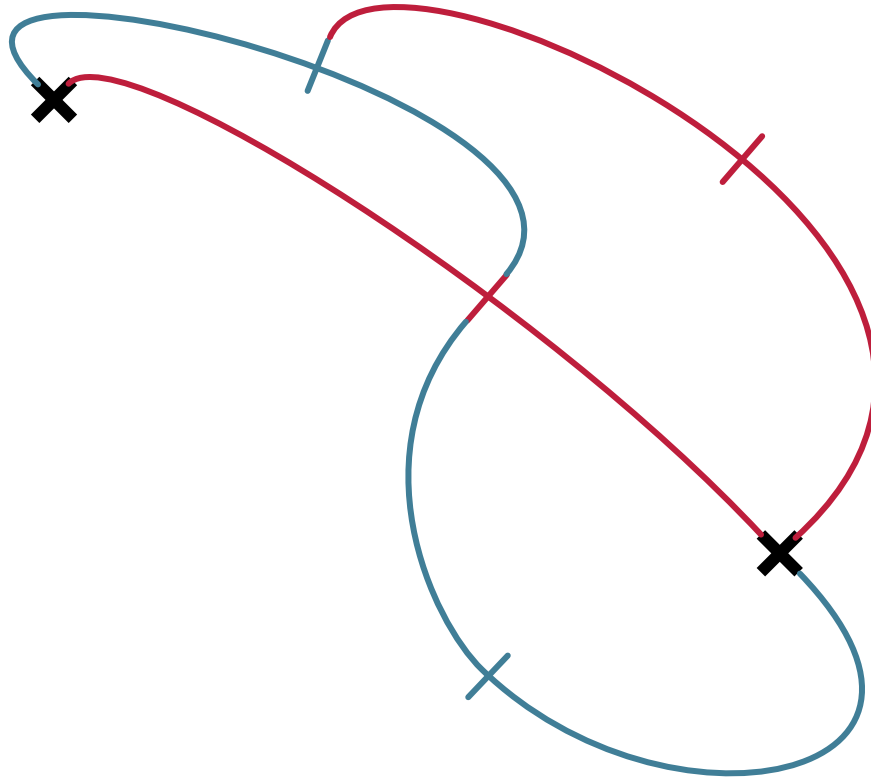
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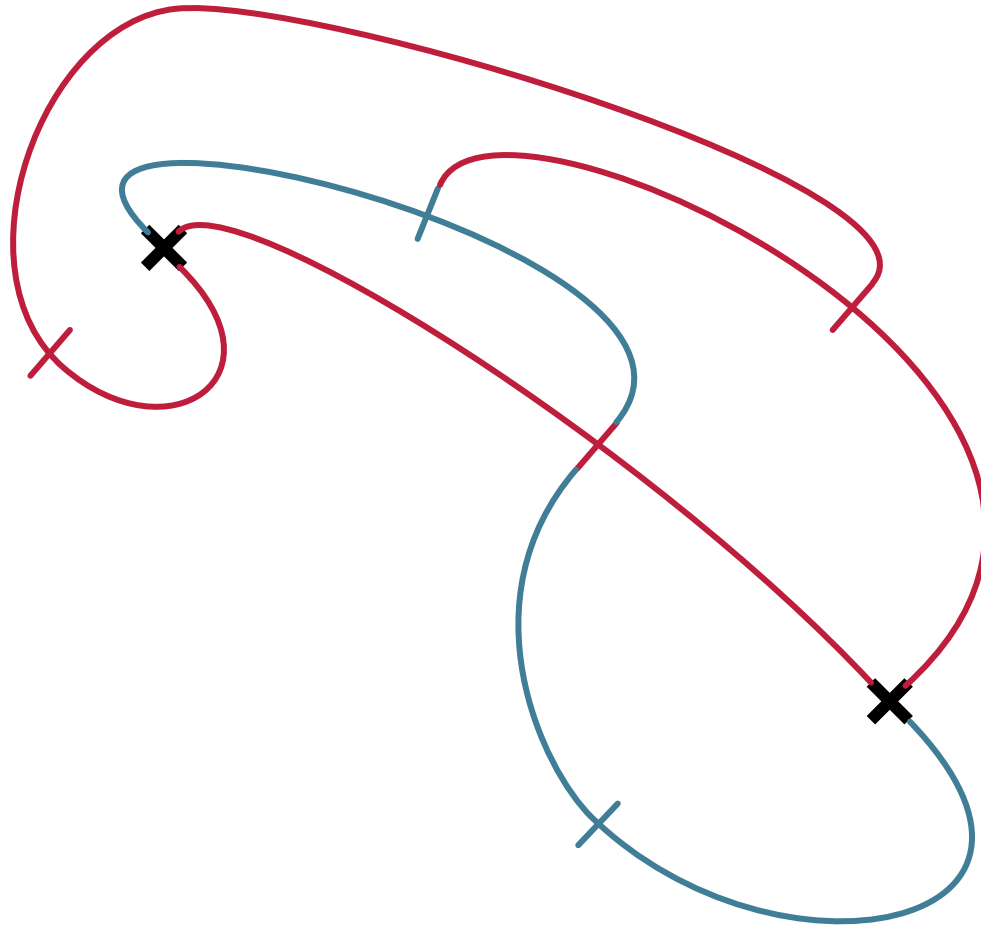
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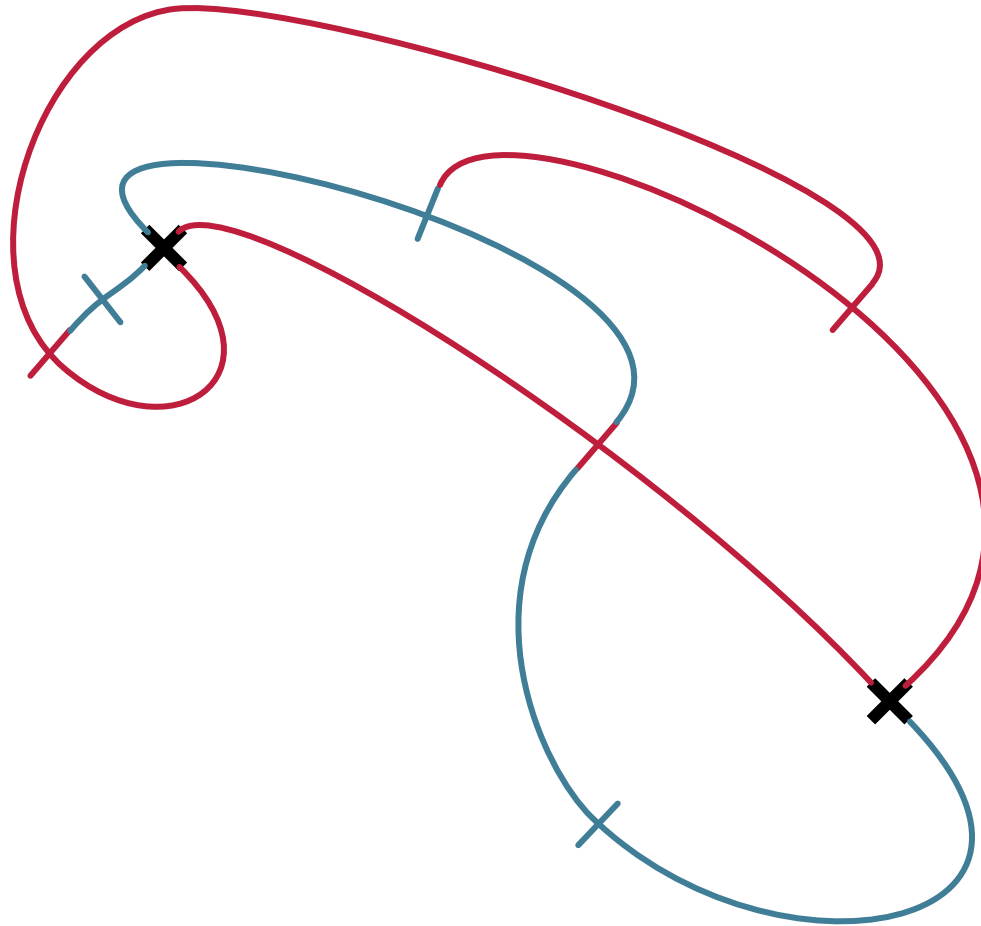
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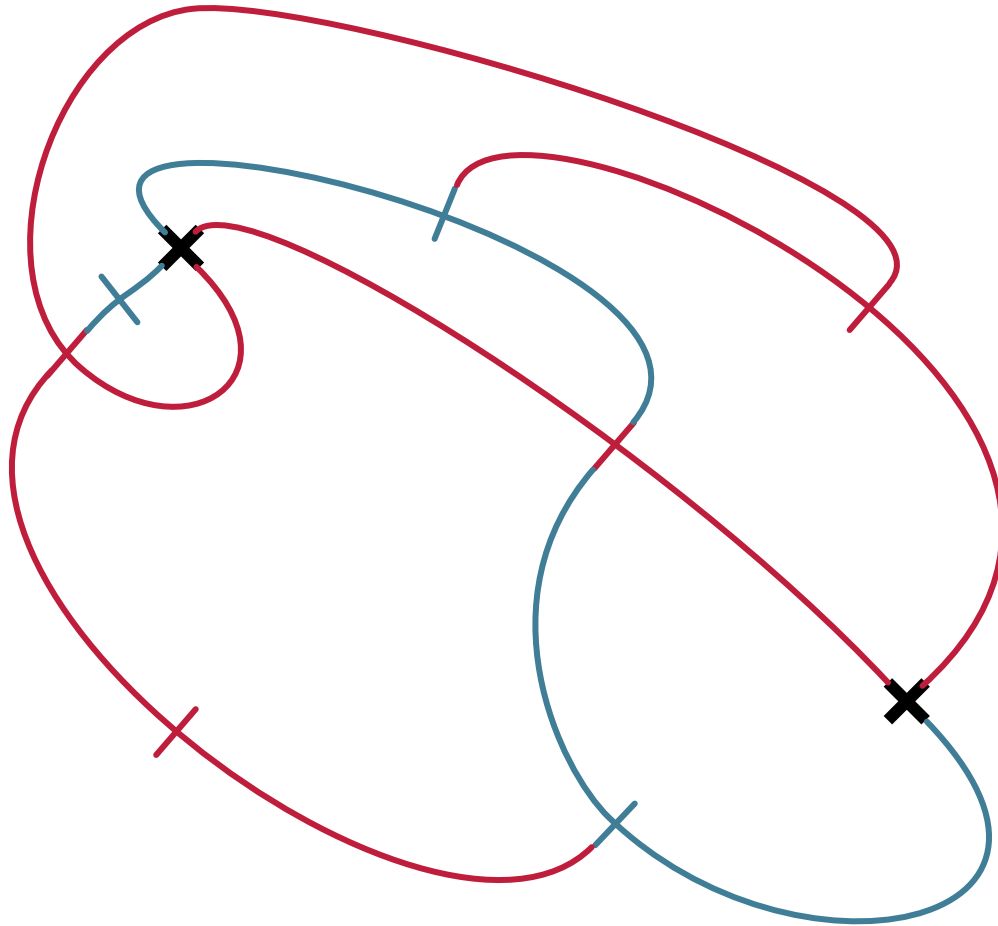
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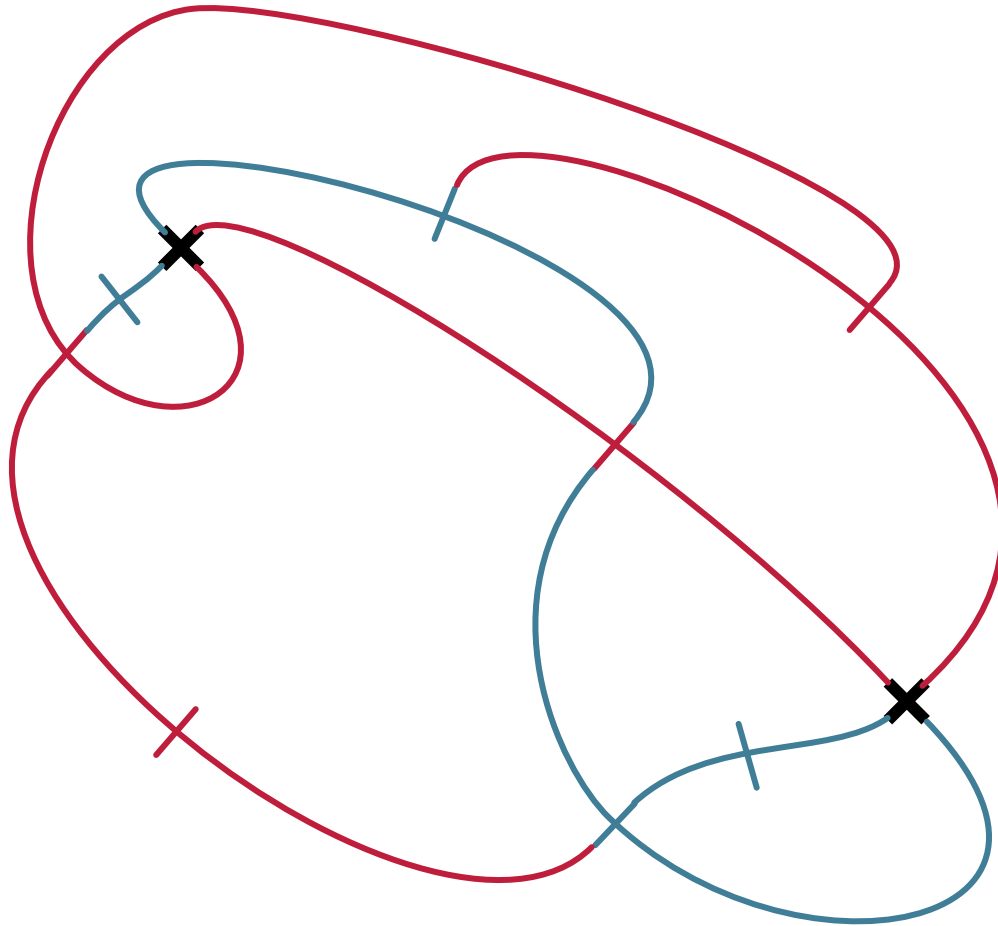
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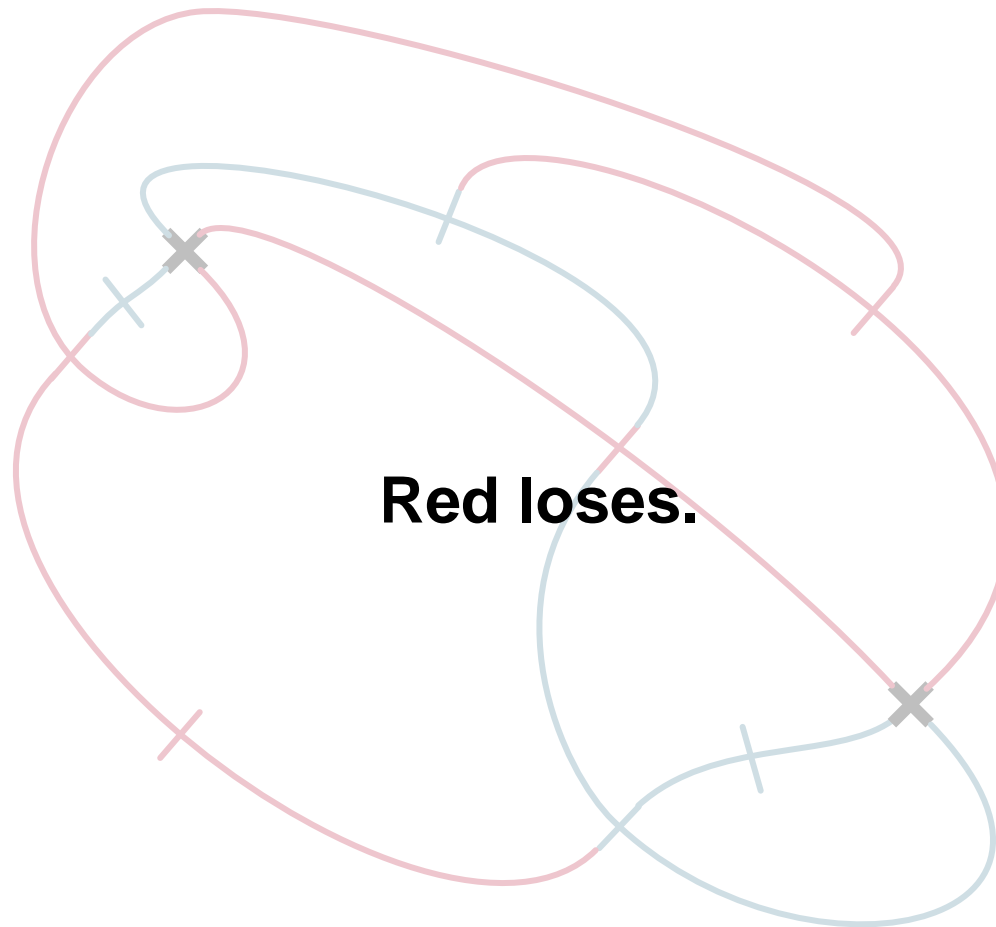
A paper-and-pencil game – Example



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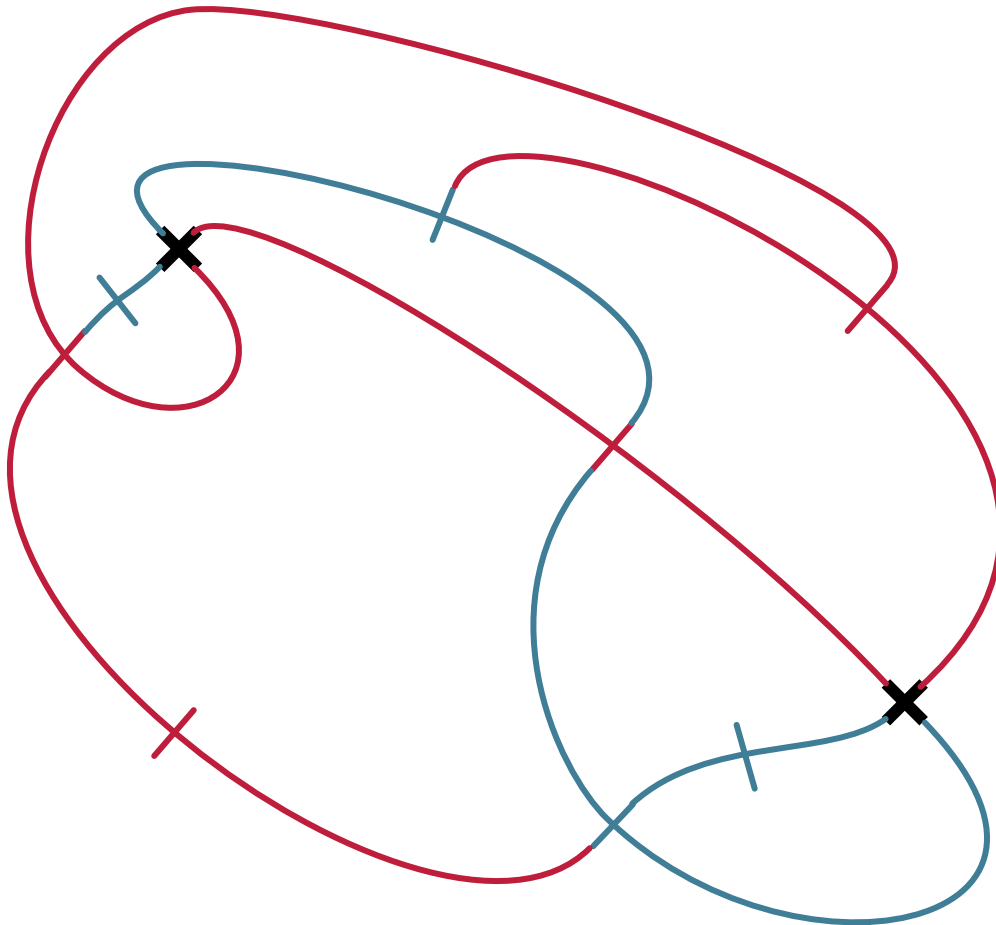


Could Red have won?

If so, why and how?

Otherwise, why not?

(Are things different if there are more \times 's at the start?)





Convex Hulls

Let \mathcal{P} be a finite point set and let $p, q \in \mathcal{P}$ be **two points**, such that their Euclidean **distance is maximum** among all pairs of points of \mathcal{P} .

Show that p and q are points on the convex hull of \mathcal{P} .



Convex Layers

The **convex layers** of a finite set of points \mathcal{P} are defined by repeatedly computing the convex hull of \mathcal{P} and removing its vertices from \mathcal{P} , until there are no points left.

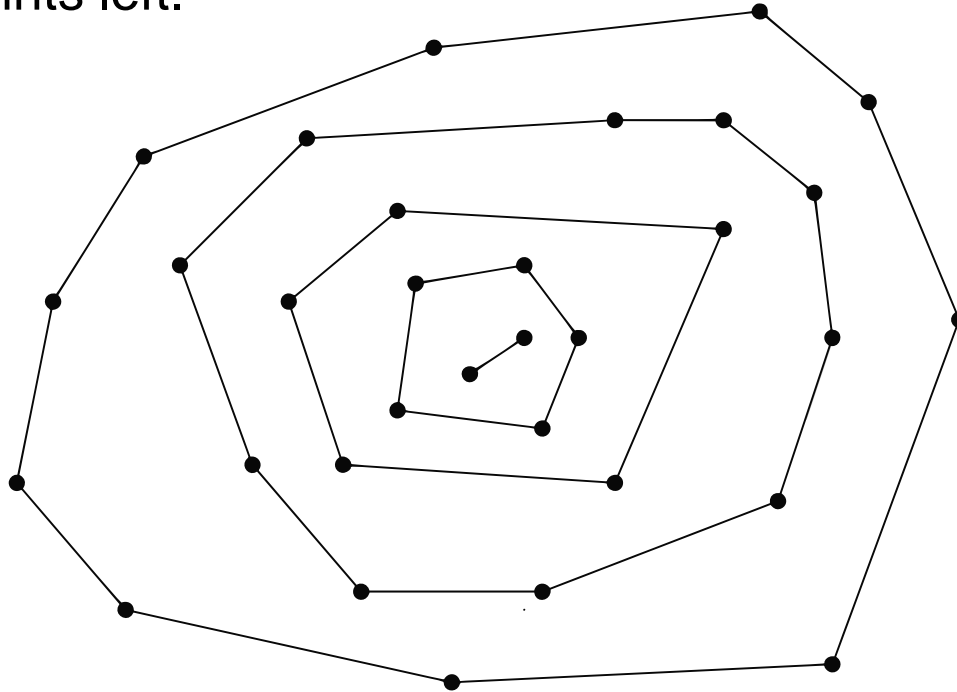


Figure: A point set and its convex layers.

Convex Layers

Describe a simple $\mathcal{O}(n^2)$ algorithm which computes the convex layers of a set of n points.

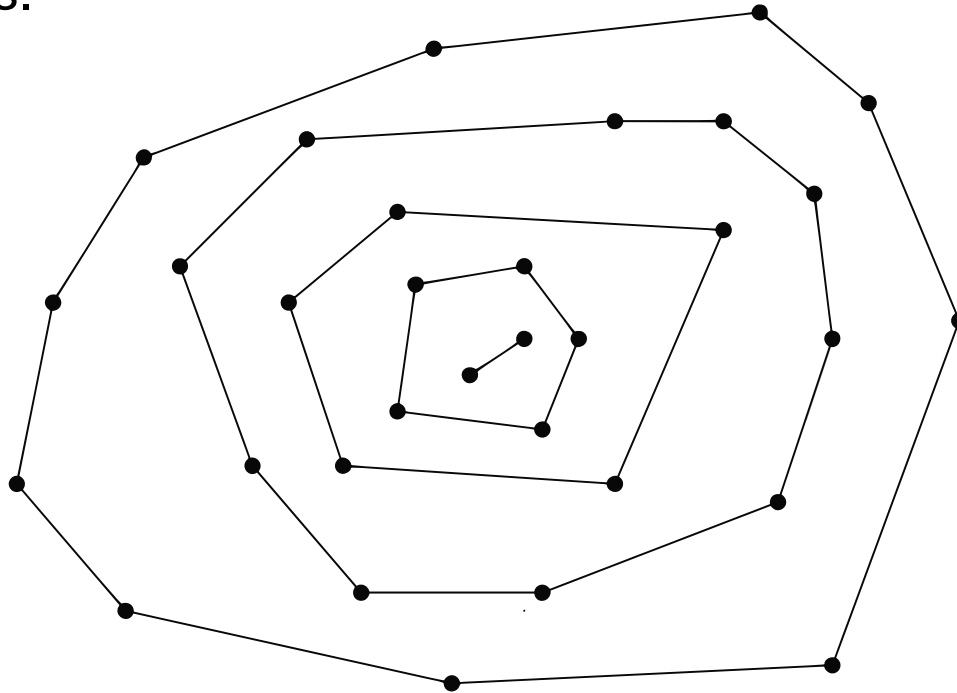


Figure: A point set and its convex layers.

