03-C-01

Triangulation

Fisk's Proof

- Triangulation

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Diagonals

- S. Fisk gave a $\boxed{\text{short proof}}$ of AGT in 1978
- For any vertices x and y of P a polygon,

  the line segment xy is

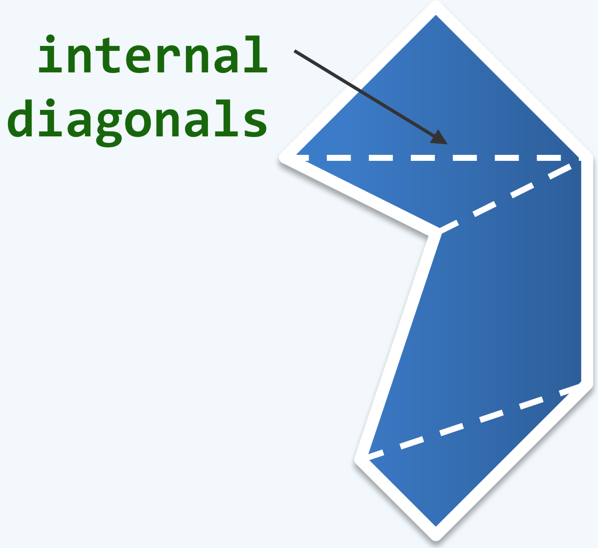
  called an $\boxed{\text{internal diagonal}}$ if

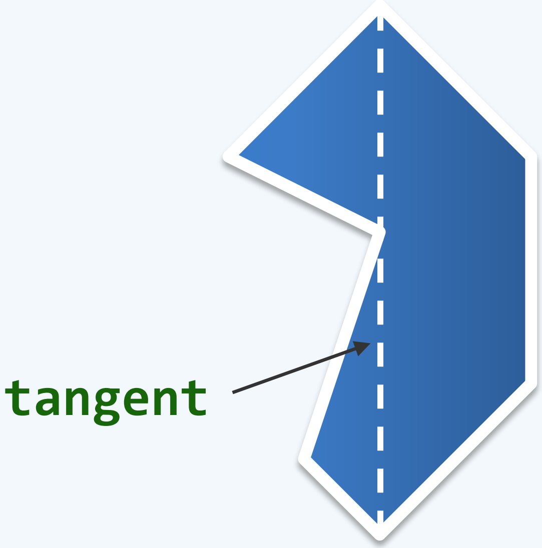
  $xy \setminus \{x, y\} \subset P \setminus \partial P$

- Note that

  neither any edge nor any tangent

  is a diagonal





Triangulation

- A set of diagonals

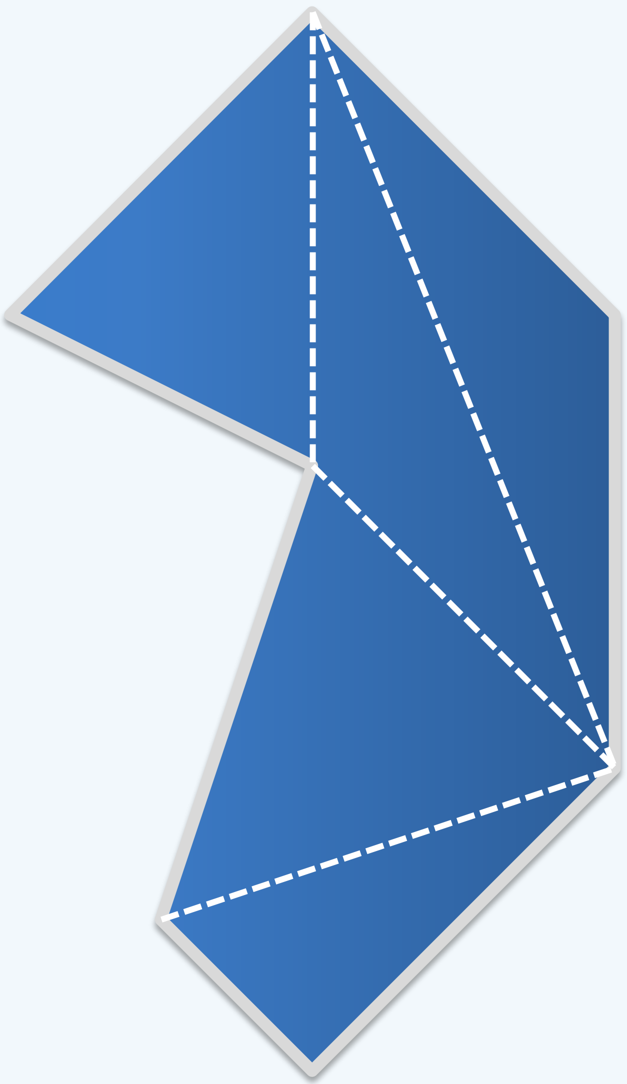
  are called consistent if

  no two intersect in their interior

- A maximal consistent diagonal set of P,

  Tri(P),

  is called a triangulation of P



Coloring

❖ The $\boxed{\text{k-coloring}}$ of Tri(P) is a mapping

C(k) : { vertices of P } → { 1, ..., k }

s.t. for any vertices p and q,

C(k)(p) = C(k)(q) $\boxed{\text{only if}}$ pq is

neither an $\boxed{\text{edge}}$ of P

nor a $\boxed{\text{diagonal}}$ in Tri(P)