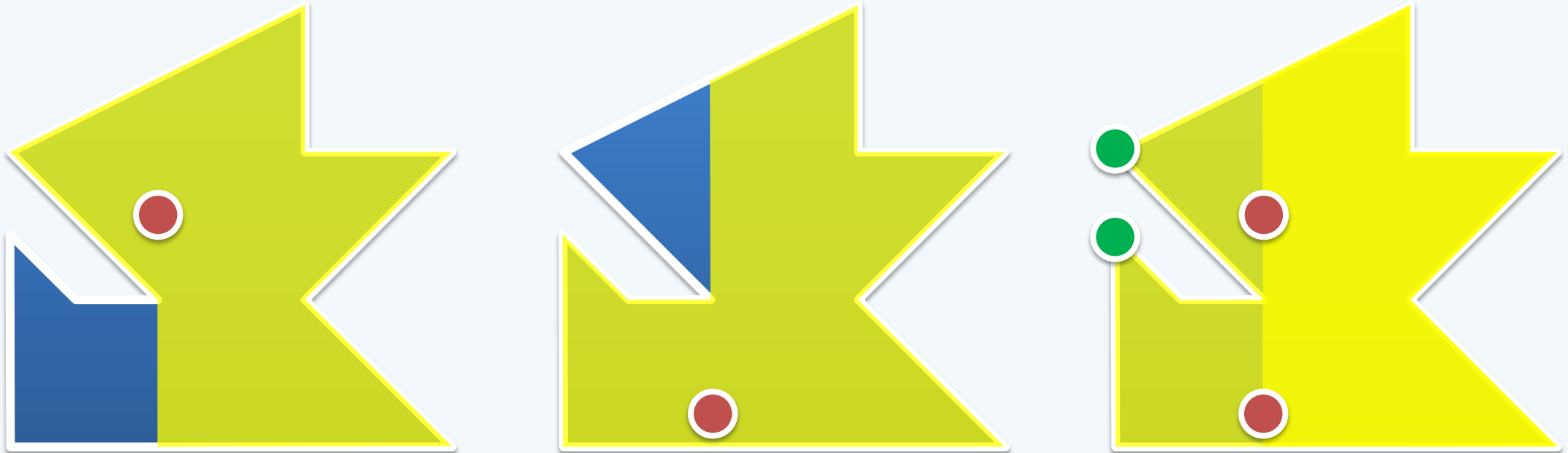# Triangulation
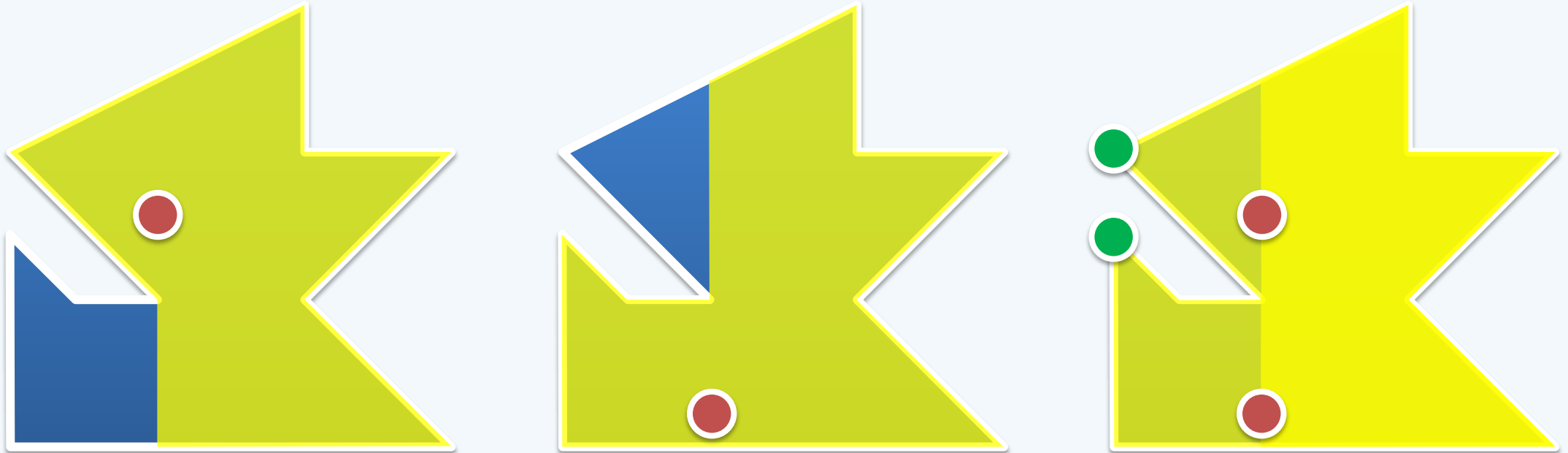
Art Gallery Problem

- Definition

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❖ [V. Klee, 1973]   What is the minimum number of guards sufficient to cover the interior of an n-wall art gallery room?

❖ ∀ **P a polygon, G(P) = min { |X| | X dominates P } = ?**

Applications

❖ **Robotics[KS87]**

  Motion planning[LTL89] [Mi88]

  Vision[XCB86]

  Graphics[CI84] [Mc87]

  CAD/CAM[Br88]

  Computer-aided architecture[RO89]

  Pattern recognition[To80]

Variations

❖ Orthogonal polygon / polygon with holes

❖ Mobile guard

❖ Exterior guard (Fortress problem)

❖ Interior + exterior guard (Prison yard problem)

❖ Floodlight

❖ Visibility: illumination of a family of convex sets / maximal hidden set

❖ High-dimensional AGP

❖ ...