03-E-04

Triangulation

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- Well-Order

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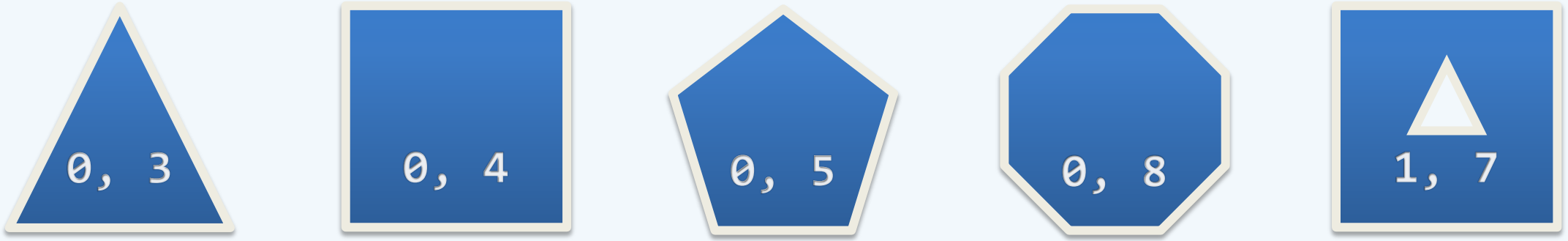
#Holes Then #Vertices

- Let P and Q be two simple polygons

- We say P is **smaller than** Q (denoted as "**P < Q**") if

  1) P has **fewer holes** than Q; or

  2) P has the same number of holes as Q, but **fewer vertices**



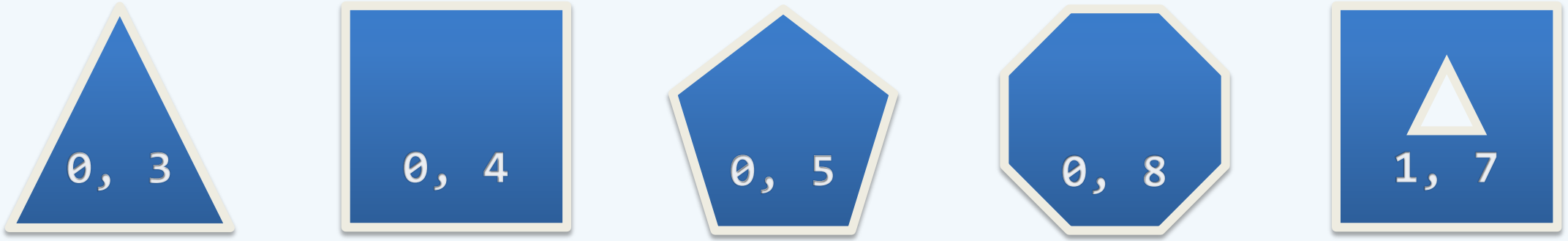
Equivalence Class Partition

❖ Note that this is actually a **lexicographical order** between polygons

❖ At the same time, an **equivalence relation** is induced over polygons:

Two polygons are equivalent to each other if

they have the **same** number of holes and vertices



Well-Ordering

- Further, a well-order is then obtained between polygon classes since
  1) any two classes is hence comparable and
  2) every collection of classes has a least one
- It's implied that

  mathematical induction can be applied here to the classes