Polygons

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Polygon

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The endpoints of those segments are called **vertices**.

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Polygon

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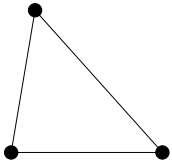
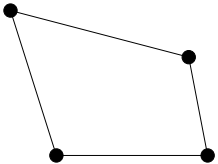
The endpoints of those segments are called **vertices**.

The segments themselves are called **edges**.

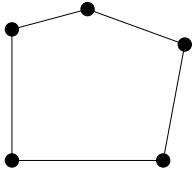
General Polygons – Examples



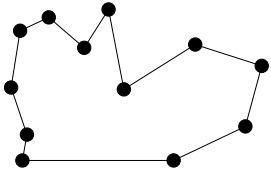
Triangle



Quadrilateral

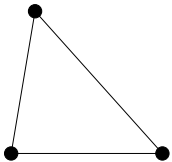


Pentagon

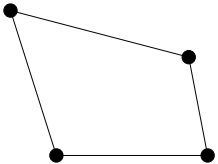


Dodecagon

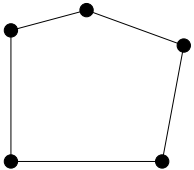
General Polygons – Examples



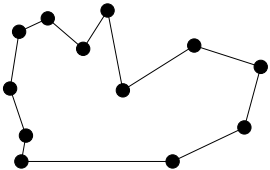
Triangle



Quadrilateral



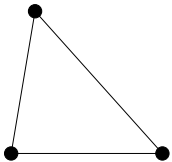
Pentagon



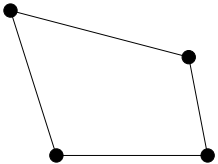
Dodecagon

A polygon with $n \in \mathbb{N}$ sides is called an n-gon.

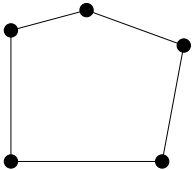
General Polygons – Examples



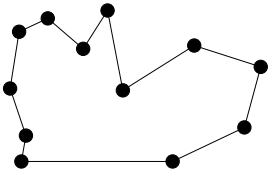
Triangle



Quadrilateral



Pentagon

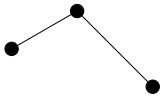


Dodecagon

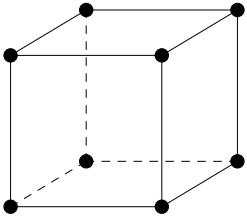
A polygon with $n \in \mathbb{N}$ sides is called an n-gon.

For example a polygon with 123456 sides is called a 123456-gon or decadismyriatrischilliatetrahectapentacontakaihexagon.

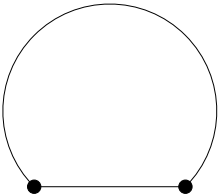
General Polygons – Counterexamples



Not closed



3D



Not straight

General Polygons – Convexity

Convex Polygon

A polygon is called **convex** if it has no internal angle greater than 180°.

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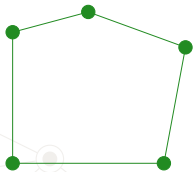
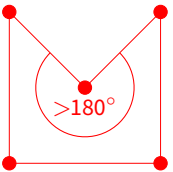


Convex



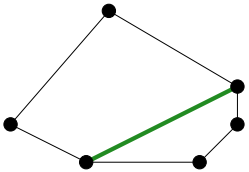
NOT convex

Convex Polygons

Convex Polygons – Diagonals

Diagonal in a Convex Polygon

A **diagonal** is a segment connecting two non-adjacent vertices.



Diagonal in a convex hexagon.