

3-5 Angles of a Polygon

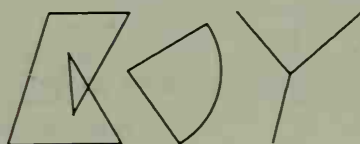
The word **polygon** means “many angles.” Look at the figures at the left below and note that each polygon is formed by coplanar segments (called *sides*) such that:

- (1) Each segment intersects exactly two other segments, one at each endpoint.
- (2) No two segments with a common endpoint are collinear.

Polygons

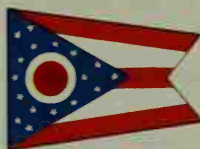


Not Polygons



Can you explain why each of the figures at the right above is *not* a polygon?

A **convex polygon** is a polygon such that no line containing a side of the polygon contains a point in the interior of the polygon. The outline of the state flag of Arizona, shown at the left below, is a convex polygon. At the right below is the state flag of Ohio, whose outline is a nonconvex polygon.



When we refer to a polygon in this book we will mean a convex polygon.

Polygons are classified according to the number of sides they have. Listed below are some of the special names for polygons you will see in this book.

<i>Number of Sides</i>	<i>Name</i>
3	triangle
4	quadrilateral
5	pentagon
6	hexagon
8	octagon
10	decagon
n	n -gon

A triangle is the simplest polygon. The terms that we applied to triangles (such as *vertex* and *exterior angle*) also apply to other polygons.