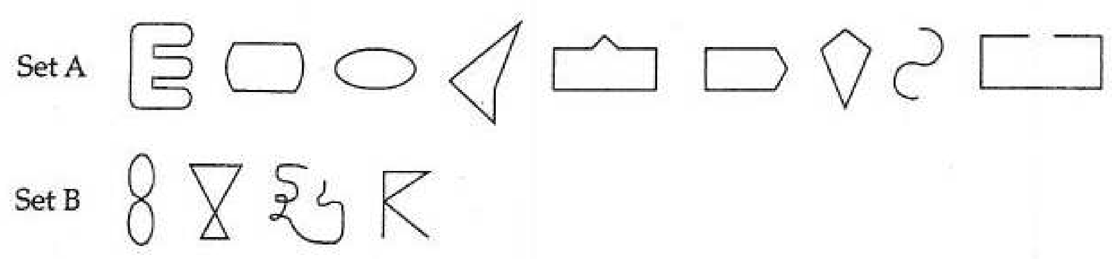
Intro to Polygons

A **curve** is a set of points you can trace without lifting your pencil.

Consider the two sets of figures below:



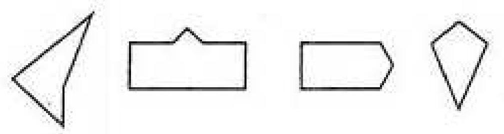
How would you describe the figures in Set A and the figures in Set B?

Define **simple curve**. (After discussion)

A figure is a **closed curve** if we can trace the figure in such a way that our starting point and ending point are the same.

Which of the figures above are **not** closed curves?

Consider the following set of figures:



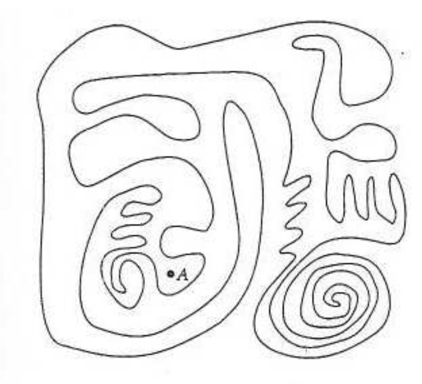
Each of the figures above is a polygon. None of the other figures in Set A or Set B are polygons. Define **polygon**.

A polygon is **convex** if and only if the line segment connecting any two points in the polygonal region lies entirely within the region. Which of the polygons above are convex?

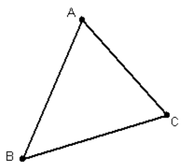
A polygon is **concave** if it is not convex. That is, if you can find two points on the interior such that the line segment between them is not entirely contained within the region. Which of the polygons above are concave?

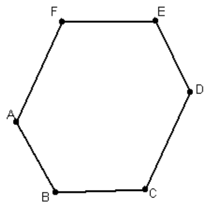
Jordan Curve Theorem Any simple closed curve partitions the plane into three disjoint regions: the curve itself, the interior of the curve, and the exterior of the curve.

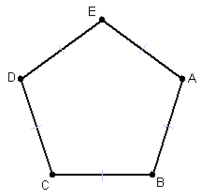
Does **A** lie in the interior or exterior of the simple closed curve below? Convince me of your answer.



Classification of Polygons:

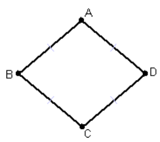




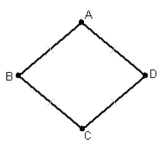


Polygons are classified by the number of sides. (Know the chart on page 699.)
Polygons are named by the capital letters the represent consecutive vertices.

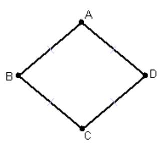
Definitions:
Interior Angle:



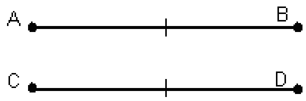
Exterior Angle (of a convex polygon):

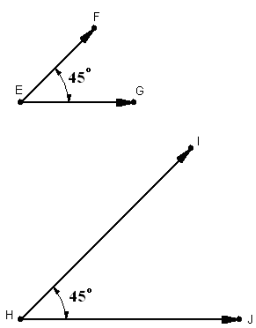


Diagonal:



Congruent:





Regular Polygon: