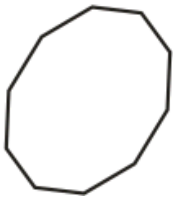
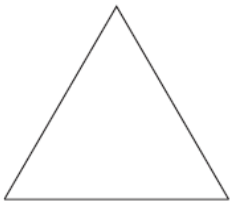
Polygons

A **polygon** is a closed figure with three or more sides.

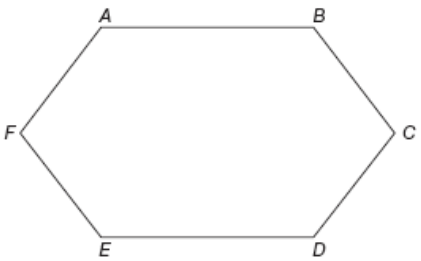


Terms Related to Polygons

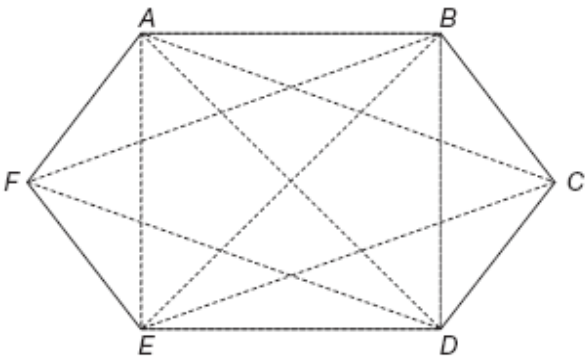
A **regular** (or equilateral) polygon has sides that are all equal; an **equiangular** polygon has angles that are all equal. The triangle below is a regular and equiangular polygon:



Vertices are corner points of a polygon. The vertices in the six-sided polygon below are: *A*, *B*, *C*, *D*, *E*, and *F*.



A **diagonal** of a polygon is a line segment between two non-adjacent vertices. The diagonals in the polygon below are line segments



$\overline{AC}, \overline{AD}, \overline{AE}, \overline{BD}, \overline{BE}, \overline{BF}, \overline{CE}, \overline{CF}, and \overline{DF}$.

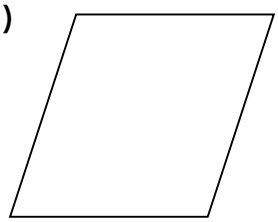
A polygon with n sides is called an n-gon. The following chart has a list with the basic polygons and their names. When the number of sides is 13 sides or more then we call the polygon 13-gon, 14-gon...

Polygons	Number of sides	Number of angles	Number of vertices	Number of diagonals
Triangle	3	3	3	0
Quadrilateral	4	4	4	2
Pentagon	5	5	5	5
Hexagon	6	6	6	9
Heptagon	7	7	7	14
Octagon	8	8	8	20
Nonagon	9	9	9	27
Decagon	10	10	10	35

Examples:

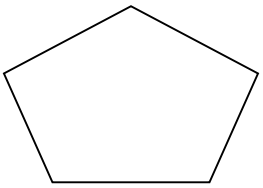
A- Identify the polygon. Write the number of sides.

1)



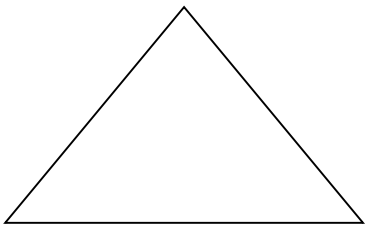
Quadrilateral, 4 sides

2)



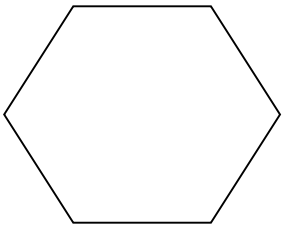
Pentagon, 5 sides

3)



Triangle, 3 sides

4)



Hexagon, 6 sides