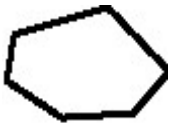
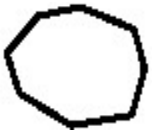
Polygons

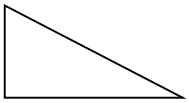
A polygon is a closed figure formed by three or more line segments. Polygons are named by the number of their sides and angles.

In a regular polygon, all sides have equal lengths and all the angles have equal measures.

	Sides and angles	Regular Polygon	Polygon that is not regular
Triangle	3		
Quadrilateral	4		
Pentagon	5		
Hexagon	6		
Octagon	8		

Examples:

A- Name each polygon and tell whether it is regular or not regular. Find the number of sides.

1) 

triangle, not regular

3 sides

2) 

quadrilateral, regular

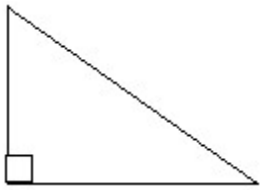
4 sides

pentagon, not regular

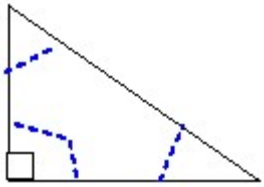
5 sides

Find the sum of angles in a triangle.

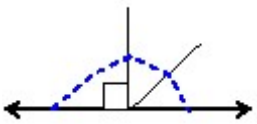
STEP 1
Draw a right triangle. Label each angle. Cut out the triangle.



STEP 2
Cut off the angles as shown.



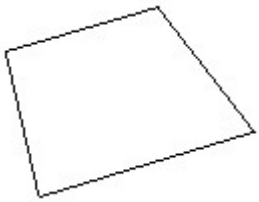
STEP 3
The angles placed together at a point form a straight angle as shown.



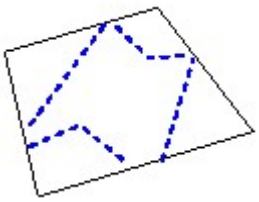
· Repeat the steps with two different-shaped triangles. Write a rule about the sum of the angles in a triangle.

Find the sum of angles in a quadrilateral.

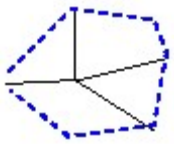
STEP 4
Draw a quadrilateral. Label each angle. Cut out the quadrilateral.



STEP 5
Cut off the angles as shown.



STEP 6
Place the labeled angles together at a point as shown.



· Repeat the steps with two different-shaped quadrilaterals. Write a rule about the sum of the angles in a quadrilateral.

Examples:

A- Tell if the following angles can form a triangle.

1) 80°, 30°, 70°
80 + 30 + 70 = 180°
Triangle

2) 55°, 50°, 75°
55 + 50 + 75 = 180°
Triangle

3) 43°, 35°, 62°
43 + 35 + 62 = 140°
Not Triangle

B- Tell if the following angles can form a quadrilateral.

4) 75°, 125°, 90°, 70°
75 + 125 + 90 + 70 = 360°
Quadrilateral

5) 125°, 100°, 60°, 50°
125 + 100 + 60 + 50 = 335°
Not Quadrilateral