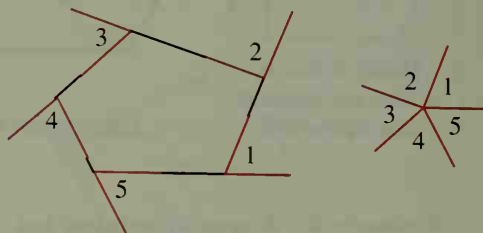


## Written Exercises

For each polygon, find (a) the interior angle sum and (b) the exterior angle sum.

- A** 1. Quadrilateral                      2. Pentagon                      3. Hexagon  
4. Octagon                      5. Decagon                      6.  $n$ -gon

7. Draw a pentagon with one exterior angle at each vertex. Cut out the exterior angles and arrange them so that they all have a common vertex, as shown at the far right. What is the sum of the measures of the exterior angles? Repeat the experiment with a hexagon. Do your results support Theorem 3-14?



8. Complete the table for regular polygons.

Number of sides	9	15	30	?	?	?	?
Measure of each ext. $\angle$	?	?	?	6	8	?	?
Measure of each int. $\angle$	?	?	?	?	?	165	178

9. A baseball diamond's home plate has three right angles. The other two angles are congruent. Find their measure.



10. Four of the angles of a pentagon have measures 40, 80, 115, and 165. Find the measure of the fifth angle.
11. The face of a honeycomb consists of interlocking regular hexagons. What is the measure of each angle of these hexagons?

**Sketch the polygon described. If no such polygon exists, write *not possible*.**

12. A quadrilateral that is equiangular but not equilateral
13. A quadrilateral that is equilateral but not equiangular
14. A regular pentagon, one of whose angles has measure 120
15. A regular polygon, one of whose angles has measure 130

