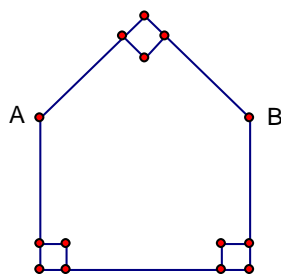
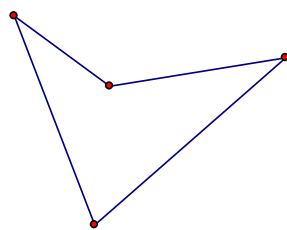


The Polygon Angle Sum Theorem Assignment

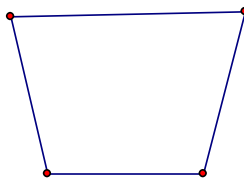
1. In baseball the home plate is shaped like the one shown. It has 3 right angles and 2 other congruent angles (A and B). Find $m\angle A$ and $m\angle B$.



2. As the number of sides of a regular polygon increases, what happens to:
 - a. the sum of the interior angles?
 - b. the measure of one central angle?
 - c. the measure of each interior angle?
3. Can a polygon be equiangular but not equilateral? Give an example.
4. Can a polygon be equilateral but not equiangular? Give an example.
5. Each interior angle of a regular polygon measures 172° . How many sides does the polygon have?
6. The four interior angles of a quadrilateral measure $x-5$, $3(x+8)$, $3x+6$, and $5x-1$. Find the measures of the four angles.
7. Is the sum of the interior angles of a convex polygon the same as a nonconvex polygon? Explain or show an example to justify your answer.



Nonconvex polygon



Convex polygon

Name: _____ Period: _____ Date: _____

The Polygon Angle Sum Theorem Assignment

8. Activity: A floor company advertises that it can cover a kitchen floor with regular polygon shaped tiles—in fact, any shape you want they will do. Is the company advertising correctly? Which regular polygons could actually fit around a point leaving no gaps?