Geometry Journal: Internal and External Angles of Other Polygons
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*P.I. G.G.36: Investigate, justify, and apply theorems about the sum of the measures of the interior and exterior angles of polygons*

*P.I. G.G.37: Investigate, justify, and apply theorems about each interior and exterior angle measure of regular polygons*

1. Find the measure of an interior angle of a regular *n*-gon for *n* = 10, 20, 30, 40, 50. What prediction would you make about the measure of an interior angle of a regular 60-gon?

2. Show that a quadrilateral can have at most three obtuse angles.

3. The manufacturer of stop signs packages them in boxes with padding on the corners. Classify the shape of the triangular piece of padding needed at each corner.

[1] It is almost $180°$.

[2] Suppose that it has four. Then the sum of the angles would be greater than $4 \times 90$, or greater than $360°$. But the sum of the angles in a quadrilateral is $360°$, so we have arrived at a contradiction. Hence, a quadrilateral can have at most three obtuse angles.

[3] Because each angle of the triangular piece is an exterior angle of the octagon, the angles are equal and the triangular piece is an isosceles right triangle.