

2.2 Angle Sums of Any Polygon

Does the pattern you observed in angle sums of regular polygons apply to irregular polygons? To tackle this question, you could draw many different polygons and measure all of the angles. But there are other strategies that provide answers with a little experimentation and some careful thinking.

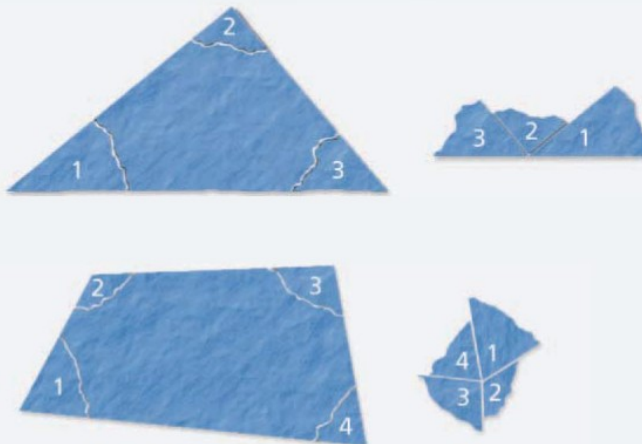


Problem 2.2



Devon, Trevor, and Casey tried three different ways to find a formula relating the angle sum of any polygon to the number of sides.

- A** Devon began by drawing irregular triangles and quadrilaterals. Then he tore the corners off of those polygons and ‘added’ the angles by arranging them like this:



1. What angle sum does Devon’s work suggest for the triangle? For the quadrilateral?
2. Test Devon’s idea with triangles and quadrilaterals of your own design. See if you get the same result.
3. Draw irregular pentagons and hexagons. Use Devon’s method to determine the angle sums for those figures.
4. Does this ‘draw and tear’ experimentation show the same angle sum pattern that you discovered with regular polygons? Why or why not?

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