



1. Identify at least three different quadrilaterals in the diagram. Find the sum of the interior angles for each quadrilateral. Make a conjecture about the sum of the interior angles of a quadrilateral.

Use front side picture, add all angles inside

Conjecture: All angles in a quadrilateral add to  $360^\circ$ .

2. Identify at least three different pentagons in the diagram. Find the sum of the interior angles for each pentagon. Make a conjecture about the sum of the interior angles of a pentagon.

same as #1

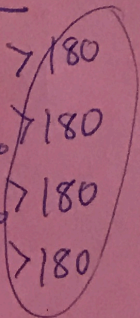
Conjecture: All angles in a pentagon add to  $540^\circ$ .

3. Do you see a pattern in the sum of the angles of a polygon as the number of sides increases?  
How can you describe this pattern symbolically?

The angle sum increases by  $180^\circ$  with each side added.

4. How can you convince yourself that this pattern holds for all  $n$ -gons?

$n$ sides	angle sum
3	$180^\circ$
4	$360^\circ$
5	$540^\circ$
6	$720^\circ$
7	$900^\circ$



linear function

$$A(n) = 180n - 360$$

or

$$A(n) = 180(n-2)$$

angle sum based on "n" sides

