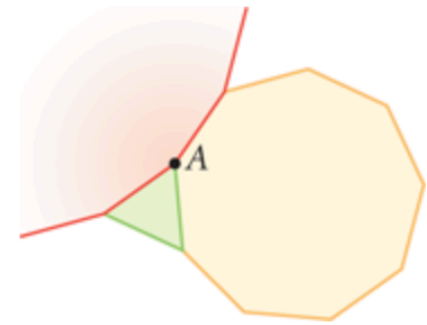


Honors Geometry HW Assignment 10/18, due 10/21

In addition to the Geometry HW sheet, I would like you to explore the following problems. Ignore the directions to work in groups since this is an individual assignment.

11. Three regular polygons meet at point A. How many sides does the largest polygon have? ----->

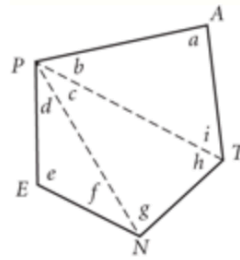
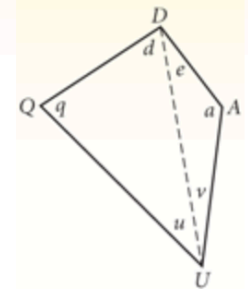


DEVELOPING PROOF

The investigation may have convinced you that the Polygon Sum Conjecture is true, but can you explain why it is true? You can use the Triangle Sum Conjecture that you proved true earlier to explain why the Quadrilateral Sum and Pentagon Sum Conjectures are true.

As a group, write a proof of the quadrilateral sum conjecture using the diagram at right.

Next, each group member writes a proof of the pentagon sum conjecture using the diagram at right. Compare your proofs. Discuss any differences and create a final proof as a group.



DEVELOPING PROOF

Exterior Angle Sum

The investigation may have convinced you that the Exterior Angle Sum Conjecture is true, but can you explain why it is true? In the investigation you used the Polygon Sum Conjecture and the Linear Pair Conjecture to discover the Exterior Angle Sum Conjecture. You can use these properties to prove that the Exterior Angle Sum Conjecture is true for quadrilaterals and pentagons.

As a group, write a proof explaining why the Exterior Angle Sum Conjecture is true for quadrilaterals using the diagram at right.

Next, each group member will write a proof explaining why the Exterior Angle Sum Conjecture is true for pentagons using the diagram at right. Then compare the proofs.

