**Polygon Angle Sums Tasks**   Name _____

1.   What is the sum of the angle measures in a triangle? Draw three different triangles – perhaps an
         equilateral triangle, an isosceles triangle, and a scalene triangle. Label the angles 1, 2, and 3. Cut
         out the triangles, and then tear off the corners of each triangle. Draw a straight line, label a
         point on the line, and place the angles from the torn corners of one triangle adjacent and
         touching so that all three vertices meet at the point. What do you notice?
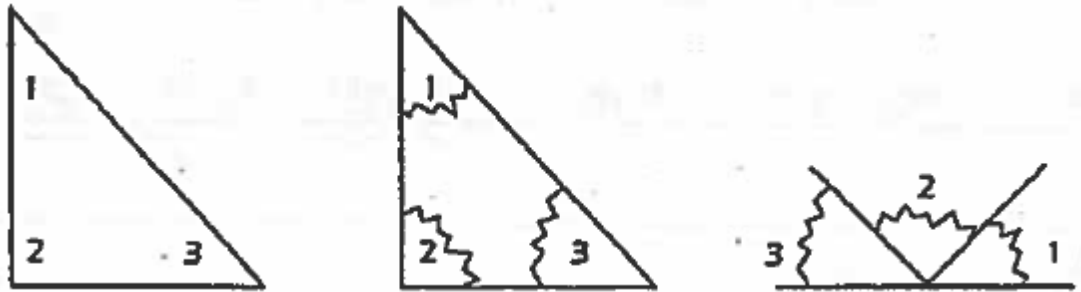
2.   What is the sum of the measures in a quadrilateral? Draw two different quadrilaterals –
         perhaps a rectangle, an isosceles trapezoid, a kite, or a quadrilateral with all sides different in
         length. Label the angles 1, 2, 3, and 4. Cut out the quadrilaterals, and then tear off the corners of
         each quadrilateral. Draw a straight line, label a point on the line, and place the angles from the
         torn corners of one quadrilateral adjacent and touching so that all four vertices meet at the
         point. What do you notice?

3.   What is the sum of the measures in a pentagon? Draw a pentagon – perhaps a regular pentagon
         or an irregular one. Label the angles 1, 2, 3, 4, and 5. Cut out the pentagons, and then tear off
         the corners of each pentagon. Draw a straight line, label a point on the line, and place the angles
         from the torn corners of one pentagon adjacent and touching so that all five vertices meet at
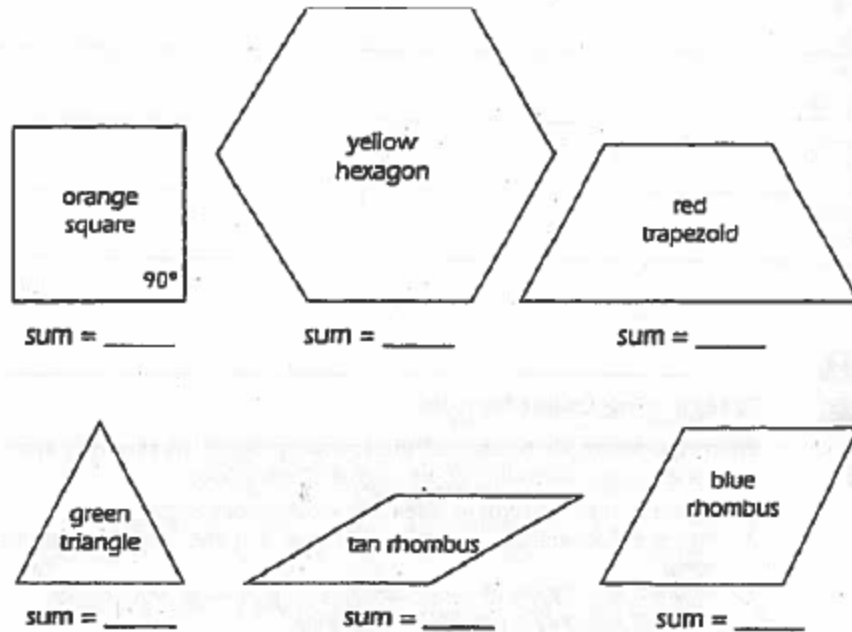   the point. What do you notice?

4.   The sum of the measures of the angles of any triangle is _____ ; the sum of the measures of
         the angles of any quadrilateral is _____ ; the sum of the measures of the angles of any
         pentagon is _____.

         Generalize: The sum of the measures of any n-sided polygon is _____ .

5. The measure of each angle of any equilateral triangle is _____ ; the measure of each angle of of any square is _____ ; the measure of each angle of any regular pentagon is _____ .

   Generalize: The measure of each angle in an n-sided regular polygon is _____ .

6. Fill in the blanks for these images of Pattern Blocks.

orange square   90°   sum = _____

yellow hexagon   sum = _____

red trapezoid   sum = _____

green triangle   sum = _____

tan rhombus   sum = _____

blue rhombus   sum = _____

7. If a polygon has 15 sides, find the sum of the measures of its angles.

8. If a regular polygon has 9 sides, find the measure of each angle.

9. If the sum of the measures of the angles of a polygon is 2160°, find its number of sides.

10. If each angle of a regular polygon is 135°, classify the polygon according to its number of sides.