Write

Describe the connection between the measure of an interior angle in a triangle and the length of the side of the triangle opposite that angle.

Remember

The sum of the measures of the interior angles of a triangle is 180°.

Practice

1. Use the figure shown to answer each question.

   a. Explain how you can use the Triangle Sum Theorem to calculate ∠UPB.

   b. Calculate the measure of ∠UPB.

   c. Explain how you can use the Triangle Sum Theorem to calculate the measure of ∠PMU.

   d. Calculate the measure of ∠PMU.

   e. List the sides of △PMB in order from shortest to longest. Explain how you determined your answer.

   f. List the sides of △PUB in order from shortest to longest. Explain how you determined your answer.

2. Determine the measure of the unknown angle in each triangle.
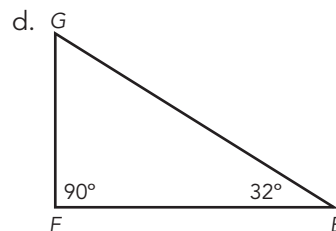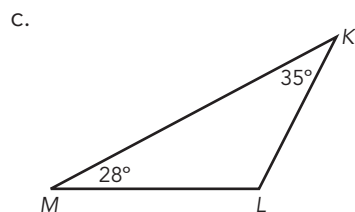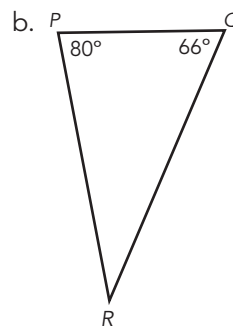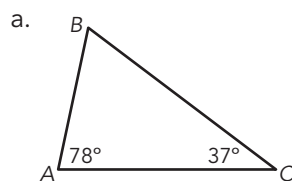
a.

b.
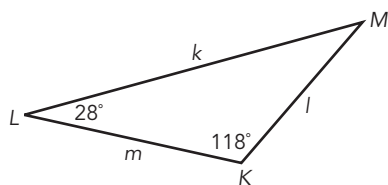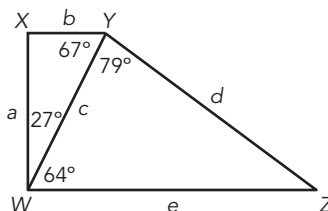
c.

d.
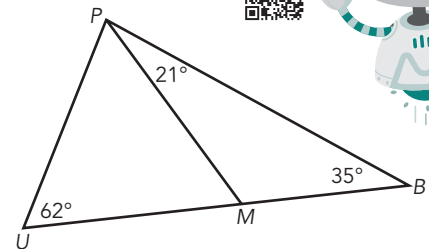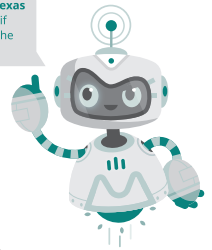
3. List the side lengths from shortest to longest for each diagram.

a.

b.

Stretch

To tessellate a plane means *to cover a surface by repeated use of a single shape or design without gaps or overlaps.* M.C. Escher was a Dutch graphic artist who famous for his tessellations, perspective drawings, and impossible spaces.

You cannot tessellate all shapes or patterns. Use what you know about the interior angles of equilateral triangles to explain why they are able to be tessellated and to determine the number of triangles around each vertex in a tessellation.
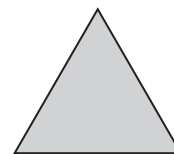
Review

1. Write the prime factorization for each number. Then, determine the greatest common factor: 18, 42.
2. List the multiples of each number. Then, determine the least common multiple: 24, 40.
3. Emilio's family volunteers at the local soup kitchen every 30 days. Emilio has swimming lessons every 9 days. He has both activities this Saturday. When will he have both activities again on the same day?
4. Determine whether it is possible to form a triangle using segments with the given measurements.
   a. 8 ft, 9 ft, 11 ft
   b. 4 m, 5.1 m, 12.5 m