Exterior Angles of a Triangle – Teacher

Teacher Notes:

Materials:

Student page

Triangle patterns

Pencil

Procedures:

1. Give each student a copy of the student page, and a triangle (either cut out or have students cut out).
2. Discuss vocabulary on page 1 of student page.
3. When students are finished use student page 2 to discuss their findings and introduce them to the theorem. Discuss how to use the theorem using examples 1 and 2 on student page 2

Exterior Angles of a Triangle (student page 1)

Exterior Angle – an angle formed by a side and the extension of an adjacent side

A

Exterior Angle

B

C

Adjacent angles – two angles that have a common side and a common vertex

Nonadjacent angles – two angles that do not have a common side or a common vertex (not touching)

Remote Interior Angles – the two nonadjacent interior angles of the exterior angle

A

Remote Interior Angles

Exterior Angle

B

C

Explore:

What is the relationship between the exterior angle of a triangle and its two remote interior angles?

Using the triangle your teacher gives you, draw an exterior angle by extending one of the triangle sides. Tear off the two remote interior angles of the exterior angle you created. Try to fit them inside your exterior angle. What do you notice?

Exterior Angles of a Triangle (student page 2)

Theorem: The measure of each exterior angle of a triangle equals the sum of the measures of its two remote interior angles.

 *m*1 + *m*2 = *m*3

1

2

3

Using the Triangle Exterior Angle Theorem

Find the values of the given variables.

Example 1:

x°

60°

55°

Example 2:

50°

92°

y°

x°

Triangle Patterns