

## **Triangles**

**STRAND: Measurement and Geometry**

**STRAND CONCEPT:** Circles and Polygons- Classify and Measure

**SOL 5.13a and 5.13b**

### ***Remediation Plan Summary***

Students measure the angles inside a triangle and then classify the triangle as acute, obtuse, or right.

### ***Common Errors and Misconceptions***

Students misread the protractor using the wrong numbers for the angles. They have a difficult time lining up the protractor correctly. Some students have a difficult time identifying the type of triangle. They confuse equilateral and isosceles triangles.

### ***Materials***

Protractors

“Warm-up” sheets

“Triangle Vocabulary” handouts

“Triangle Classification” handouts

“Triangle Classification Table” handouts

“Reflection” sheet

### ***Introductory Activity***

Distribute the “Warm-up”, and remind students that the sum of the measures of the three angles in a triangle equals  $180^\circ$ . You may wish to give them an example to help them remember this fact. Review how to find the measure of the third angle in a triangle when the other two angle measures are known. Have students complete the worksheet, and go over the answers before going on to the lesson.

### ***Plan for Instruction***

1. Distribute the “Triangle Vocabulary” handouts, and explain to or review with students that a triangle is classified by its largest angle. Go over the terms on the handout.
2. As a class, classify the four triangles on the “Warm-up”.
3. Explain and demonstrate how to extend the sides of a triangle to measure the angles and how to measure each angle inside the triangle to get all three angle measurements.
4. Distribute copies of the “Triangle Classification” and the “Triangle Classification Table” worksheets. The “Triangle Classification” worksheet is two pages and was designed to give the students space to extend the sides of the triangles for more accurate measuring.
5. Have students measure all three angles of each triangle and then classify each triangle. Have them record their answers on the “Triangle Classification Table.” Make sure students check to see that all three angles do add up to  $180^\circ$ .

*AR Remediation Plan – Circles and Polygons-Classify and Measure*

***Pulling It All Together (Reflection)***

Have students complete the “Reflection” sheet.

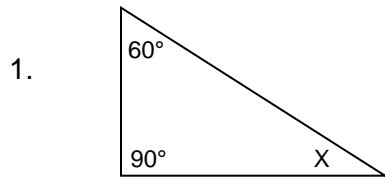
**Note: The following pages are intended for classroom use for students as a visual aid to learning.**

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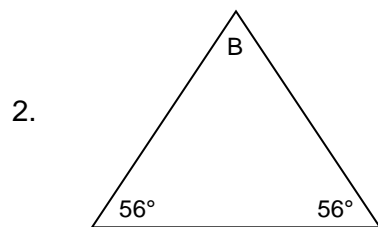
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## Warm-up

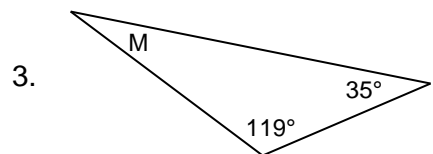
Find the measure of the missing angle in each triangle below. Do not use a protractor.  
**Remember: The measures of the three angles in a triangle add up to 180°.**



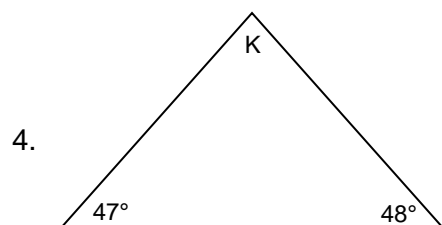
Measure of  $\angle X =$  \_\_\_\_\_



Measure of  $\angle B =$  \_\_\_\_\_



Measure of  $\angle M =$  \_\_\_\_\_



Measure of  $\angle K =$  \_\_\_\_\_

## Triangle Vocabulary

### **polygon**

A closed plane figure in which all the sides are line segments.

### **triangle**

A three-sided polygon.  
The sum of the measures of the three angles of a triangle equals  $180^\circ$ .

### **acute triangle**

A triangle that has three acute angles.

### **obtuse triangle**

A triangle that has one obtuse angle.

### **right triangle**

A triangle that has one right angle.

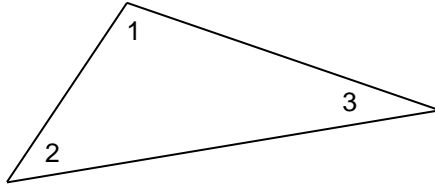
Remember: A triangle is classified by the **largest** of the three angles that form the triangle.

Name: \_\_\_\_\_

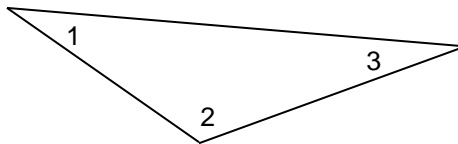
## Triangle Classification

Measure each of the angles in each triangle using a protractor. Extend the sides if necessary. Make sure that the measures of the three angles add up to  $180^\circ$ . Record your answers in the Triangle Classification Table. Once you have figured out the measurement of each angle in the triangle, classify the triangle as acute, obtuse, or right.

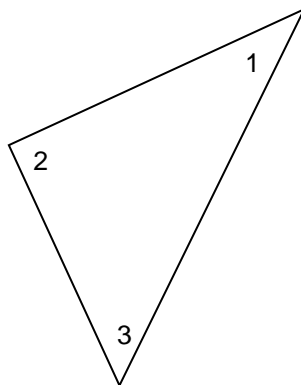
1.



2.



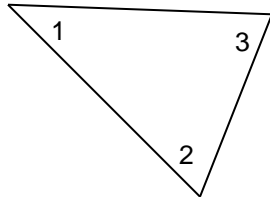
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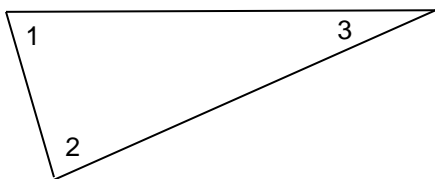
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## Triangle Classification

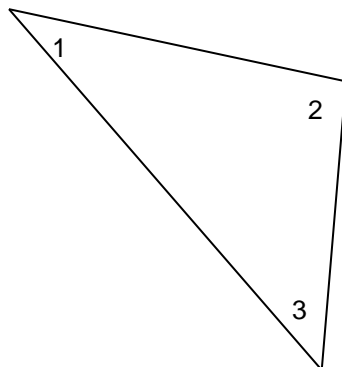
4.



5.



6.



Name: \_\_\_\_\_

## Triangle Classification Table

Triangle Number	Angle 1	Angle 2	Angle 3	Sum of the three angles	Classification
1					
2					
3					
4					
5					
6					

Name: \_\_\_\_\_

## Reflection

1. Draw an obtuse triangle. Label the angles using the letters B, M, J and measure them.

Angle B \_\_\_\_\_

Angle M \_\_\_\_\_

Angle J \_\_\_\_\_

2. Draw a right angle triangle. Label the right angle K. Label the 2 acute angles S and H. Measure all the angles

Angle K \_\_\_\_\_

Angle S \_\_\_\_\_

Angle H \_\_\_\_\_