Triangle Sides & Angles

TriangleSidesAngles.tns

Name _____

Class _____

Problem 1 – Size and Location of Sides and Angles

On page 1.2, construct triangle ABC, (**MENU > Shapes > Triangle**). The vertices may be labeled by typing a letter after placing each point or after the triangle is complete by using the **Text** tool (**MENU > Action > Text**).

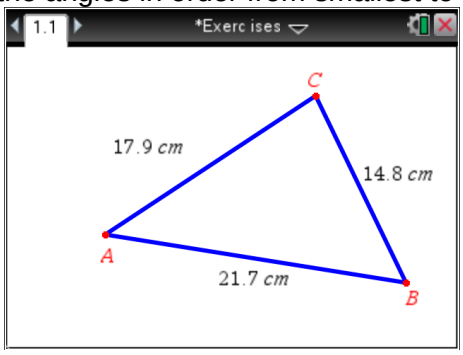
Measure the three angles, using the **Angle** tool from the Measurement menu. Press ⬚ (or enter) three times to select the vertices of the triangle, such that the vertex of the angle you are measuring is the second point chosen; i.e., to measure ∠*A*, you can click *B*, *A*, *C* or *C*, *A*, *B*. Then press ⬚ (or enter) again to anchor the measurement in the desired place.\

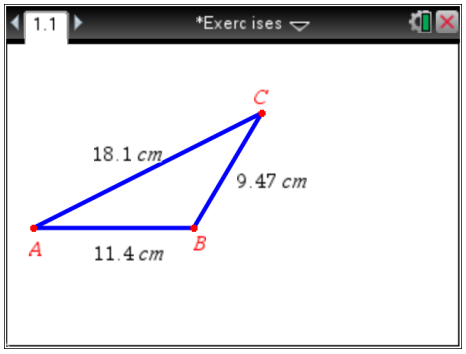
Measure the side lengths of the triangle using the **Length** tool from the Measurement menu. Click on the endpoints of the segment. If you click on the side itself, the tool will return the *perimeter* of the triangle. Or press tab when the cursor is on the side of the triangle and then click the side.

1. Where is the largest angle of the triangle located relative to the longest side?

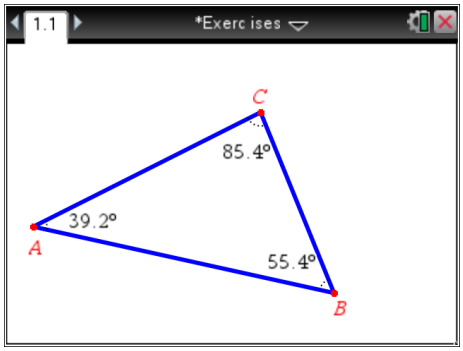
2. Where is the smallest angle of the triangle located relative to the shortest side?

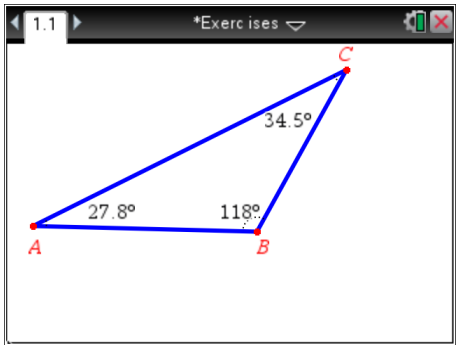
3. List the angles in order from smallest to largest.

a. 

b. 

4. List the sides in order from shortest to longest.

a. 

b. 

Problem 2 – The Isosceles Triangle Theorem

On page 2.2, an isosceles triangle has been constructed. Measure all three angles using the **Angle** tool.

5. At the right, make a sketch of your triangle with the side lengths and angle measures labeled.

Drag a vertex of the triangle and observe what happens to the angle measures.

6. *Complete this statement:*

   If two sides of a triangle are congruent, then _____.

On page 2.5, another isosceles triangle has been constructed. Measure all three sides using the **Length** tool, and drag a vertex to explore.

7. *Complete this statement:*

   If two angles of a triangle are congruent, then _____.

Problem 3 – Types of Angles in a Triangle

8. Drag a vertex of the triangle and classify the types of angles that exist (acute, right, obtuse).

∠*A*	∠*B*	∠*C*

9. Can a triangle have three acute angles? Make a sketch to support your answer.

10. Can a triangle have three right angles? Make a sketch to support your answer.

11. Can a triangle have three obtuse angles? Make a sketch to support your answer.

12. Look back at your answers for Exercises 6 and 7. Explain why you got these answers.