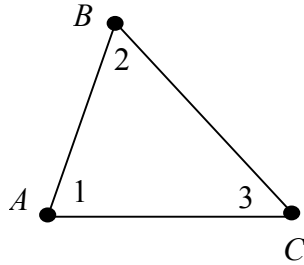


Section 3.5 (Alternative proof of the Triangle Sum Theorem)

Given $\triangle ABC$: (Cut out the triangle at the bottom of the page)

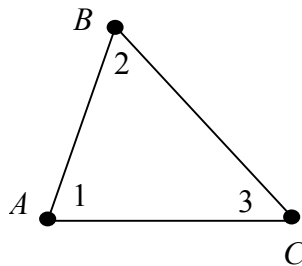


Rotate $\triangle ABC$ 180 degrees about the midpoint of \overline{BC} . Sketch your result.

Finally, translate the triangle horizontally over the distance AC . Sketch your result.

Look at the angles whose vertices are at point C .
What is the sum of those angles?

Why must the sum of the angles of $\triangle ABC$ equal 180° ?



Technology Investigation for the Instructional Guide Lesson on the Relationship Between the Angles of a Triangle and the Lengths of the Sides Opposite those Angles.

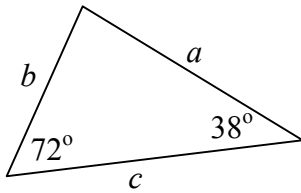
- Using dynamic geometry software, draw a triangle.
- Measure the angles, and the lengths of the sides opposite the angles, and display those on the screen.
- Drag the vertices of the triangle. Notice the relationship between the measure of the angles and the lengths of the sides.
- Write a conjecture about the relationship between the measure of the angles and the lengths of the sides.

- Write the converse of this conjecture and determine whether it is true.

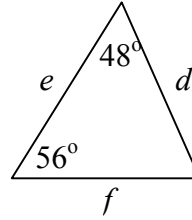
Practice for the Instructional Guide Lesson on the Relationship of the Angles of a Triangle and the Lengths of the Sides Opposite those Angles.

In the triangles below, arrange the unknown measures in order from least to greatest. The drawings are not drawn to scale.

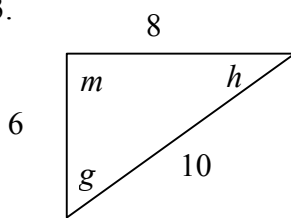
1.



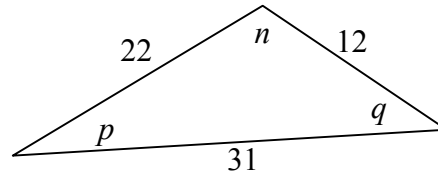
2.



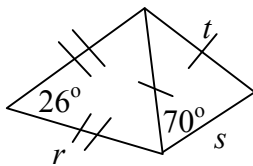
3.



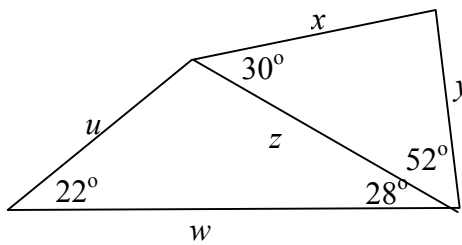
4.



5.



6.



Section 3.8 Cabri Investigation # 1

- Press F5 (Graph) go to Hide/Show, highlight Axes, and press Enter. Coordinate axes will appear on the screen. Use the hand feature to move these axes.
- Draw a line on the screen using the line tool.
- Measure the slope of the line using the measure tool.
- Construct a parallel to the line using the parallel construction tool.
- Measure the slope of that line using the measure tool. What do you notice about the slopes of the two lines?
- Move the original line using the hand tool. Describe what happens when the line is selected and moved and when a point on the line is selected and moved.
- Make a conjecture about the slopes of parallel lines.

Section 3.8 Cabri Investigation # 2

- If the coordinate axes do not appear on the screen, press F5 (Graph) go to Hide/Show, highlight Axes, and press Enter. Coordinate axes will appear on the screen. Use the hand feature to move these axes.
 - Draw a line on the screen using the line tool.
 - Measure the slope of the line using the measure tool.
 - Construct a perpendicular to the line using the perpendicular construction tool.
 - Measure the slope of that line using the measure tool.
 - Calculate the product of the slopes. Using the Calculate tool (F5), highlight Calculate and press Enter.
 - Press the multiplication key (\times).
 - Move the arrow to one of the slopes and press Enter. Move the arrow to the other slope and press Enter. The product of the slopes will appear. Use the hand tool to move the calculation where desired.
 - Use the hand tool to move the original line. Describe what happens when the line is selected and moved and when a point on the line is selected and moved.
-
- Make a conjecture about the slopes of perpendicular lines.