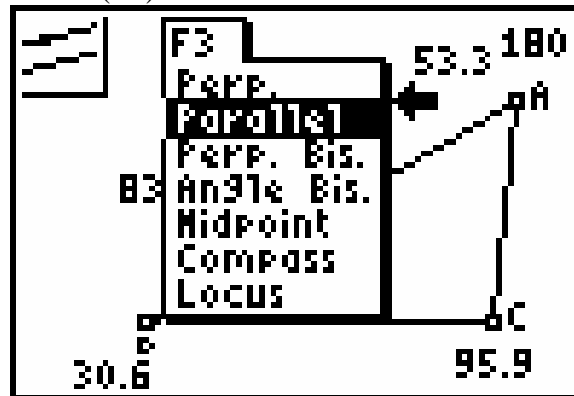# Extension: Parallel Lines and the Sum of the Angles
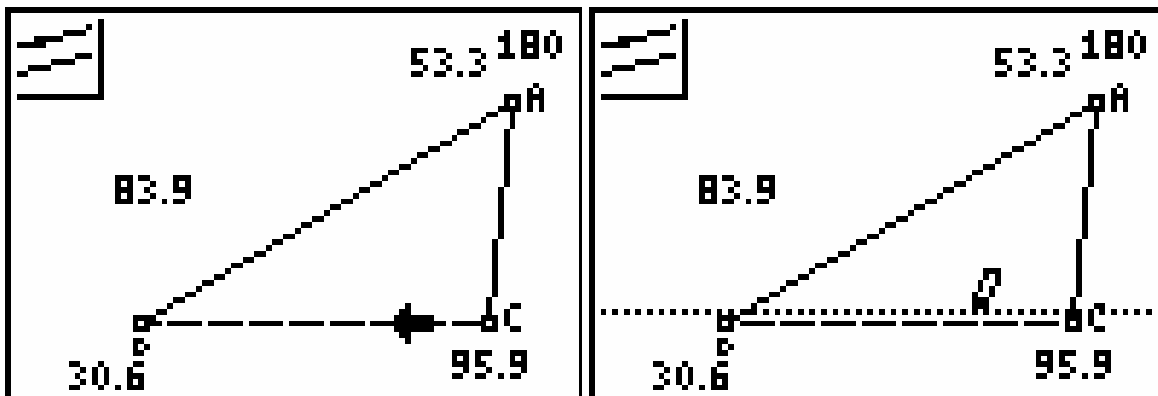
- Press the **CLEAR** key to disengage the hand.

Draw a line parallel to segment **BC** through **A**.
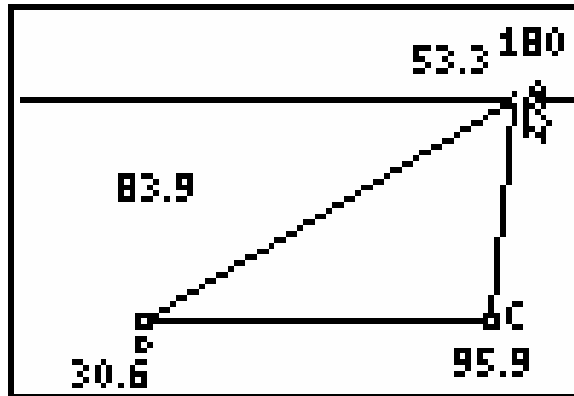- Select the **Parallel** tool(**F3**).

- Select segment **BC** first, then select point **A** and press **ENTER**.

- Move the cursor to point **A**, making sure the point at **A** is flashing, and press **ENTER** to attach the parallel line to segment **BC** to **A**.
- Press **CLEAR**. Then press **CLEAR** again to disengage the **Parallel** tool.
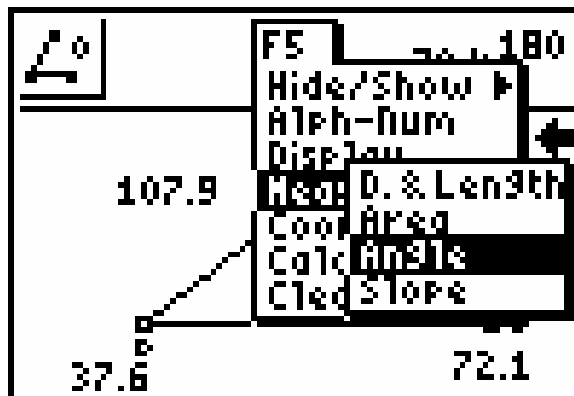
- Press **ALPHA** and use the left arrow key to move point **A** horizontally along the parallel line.
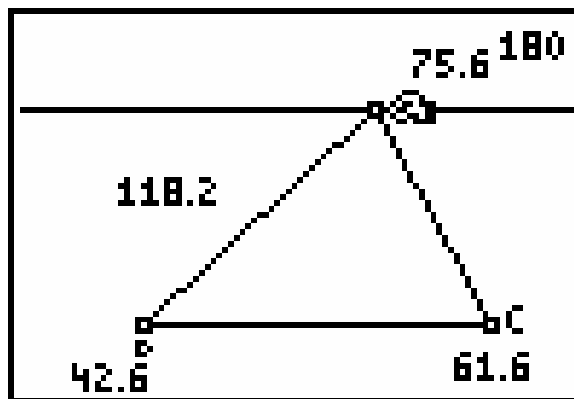
- Move point A back right and then press **CLEAR**.

Display the measure of <**BAD** and <**CAE**, where **D** and **E** are on the parallel line on opposite sides of point **A**. You do not need to create the points **D** and **E** to measure the angles.

- Select **Measure:Angle** (**F5**).

- Press **ENTER** to select **Measure:Angle.**

- Move the cursor to a point on the parallel line left of **A** and press **ENTER** again.

A point is placed on the parallel line and is selected as the first point of your measurement. (We will place the label **D** on it later.)

- Complete the measurement of the angle by selecting **A** (then pressing **ENTER**), then **B** and pressing **ENTER**.

The hand will move the measure near **A**.

- Place it in the interior of the angle.

Move the cursor to the right of **A** on the parallel line and press **ENTER**.

- Move the cursor to the right of **A** on the parallel line and press **ENTER**.
- Select points **A** and **C** to complete the measurement. Move the measurement to the interior of the angle.
- Press **ENTER** to escape from the Measure tool.
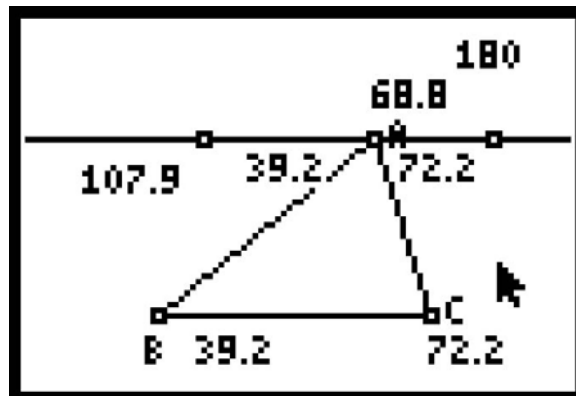
- Move the measure of <**B** to the interior of the angle, move the measure of <**C** to the interior of the angle, and move the measure of <**A** to the interior of <**A**.
- Use **Alph-num** (**F5**) to place **D** and **E** on corresponding points on the line through **A**.
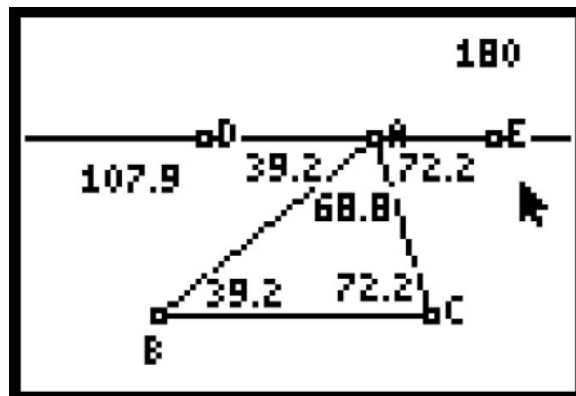
Discuss the reasoning that could be used to prove that the sum of the measures of the interior angles of a triangle is 180 using the figure above.