

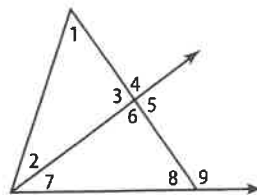
Check Your Understanding

= Step-by-Step Solutions begin on page R14.

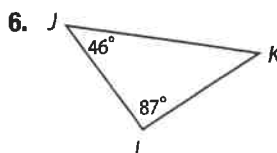
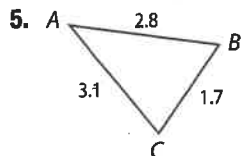


Example 1 Use the Exterior Angle Inequality Theorem to list all of the angles that satisfy the stated condition.

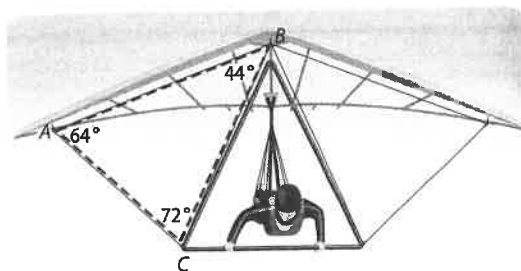
- measures less than $m\angle 4$
- measures greater than $m\angle 7$
- measures greater than $m\angle 2$
- measures less than $m\angle 9$



Examples 2–3 List the angles and sides of each triangle in order from smallest to largest.



Example 4 **7. HANG GLIDING** The supports on a hang glider form triangles like the one shown. Which is longer—the support represented by \overline{AC} or the support represented by \overline{BC} ? Explain your reasoning.

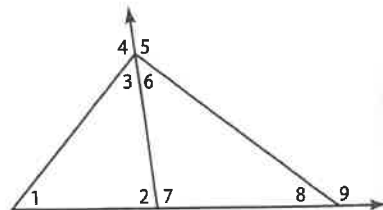


Practice and Problem Solving

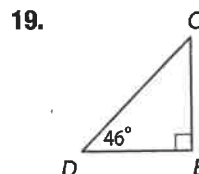
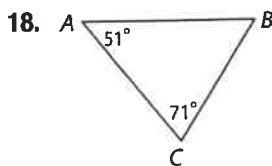
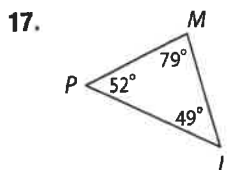
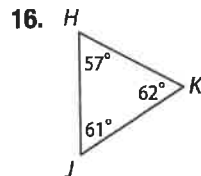
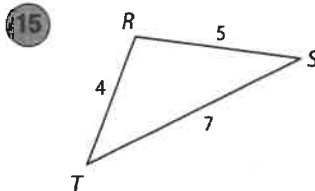
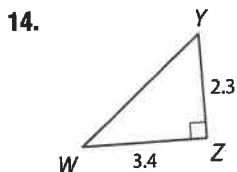
Extra Practice is on page R5.

Example 1 **SENSE-MAKING** Use the Exterior Inequality Theorem to list all of the angles that satisfy the stated condition.

- measures greater than $m\angle 2$
- measures less than $m\angle 4$
- measures less than $m\angle 5$
- measures less than $m\angle 9$
- measures greater than $m\angle 8$
- measures greater than $m\angle 7$

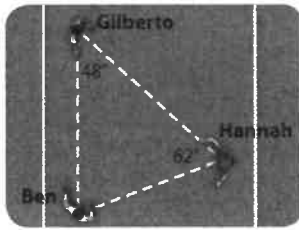


Examples 2–3 List the angles and sides of each triangle in order from smallest to largest.

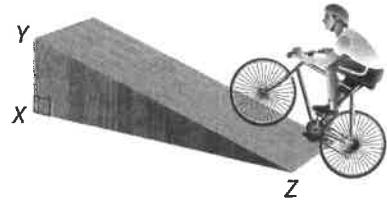


Example 4

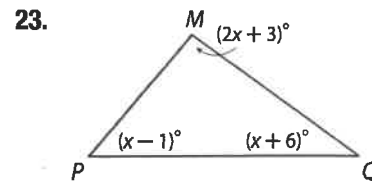
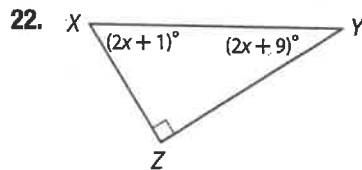
- 20. SPORTS** Ben, Gilberto, and Hannah are playing Ultimate. Hannah is trying to decide if she should pass to Ben or Gilberto. Which player should she choose in order to have the shorter passing distance? Explain your reasoning.



- 21. RAMPS** The wedge below represents a bike ramp. Which is longer, the length of the ramp \overline{XZ} or the length of the top surface of the ramp \overline{YZ} ? Explain your reasoning using Theorem 5.9.

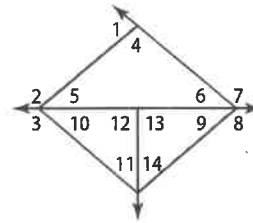


List the angles and sides of each triangle in order from smallest to largest.



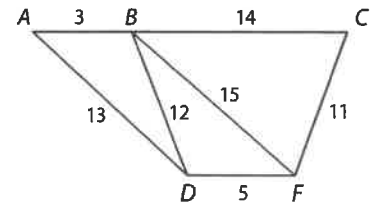
Use the figure at the right to determine which angle has the greatest measure.

- 24.** $\angle 1, \angle 5, \angle 6$ **25.** $\angle 2, \angle 4, \angle 6$
26. $\angle 7, \angle 4, \angle 5$ **27.** $\angle 3, \angle 11, \angle 12$
28. $\angle 3, \angle 9, \angle 14$ **29.** $\angle 8, \angle 10, \angle 11$



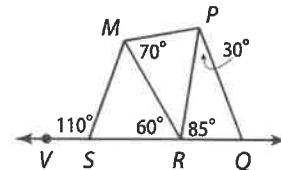
CCSS SENSE-MAKING Use the figure at the right to determine the relationship between the measures of the given angles.

- 30.** $\angle ABD, \angle BDA$ **31.** $\angle BCF, \angle CFB$
32. $\angle BFD, \angle BDF$ **33.** $\angle DBF, \angle BFD$



Use the figure at the right to determine the relationship between the given lengths.

- 34.** SM, MR **35.** RP, MP
36. RQ, PQ **37.** RM, RQ



- 38. HIKING** Justin and his family are hiking around a lake as shown in the diagram at the right. Order the angles of the triangle formed by their path from largest to smallest.

