Name_____ Date_____

5.5 – Inequalities in Triangles

Explain why $m\angle 1 > m\angle 2$.
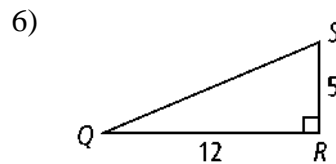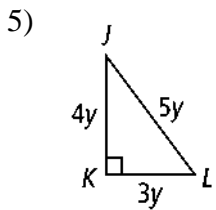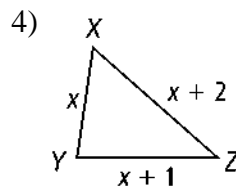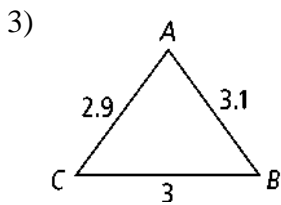
1)

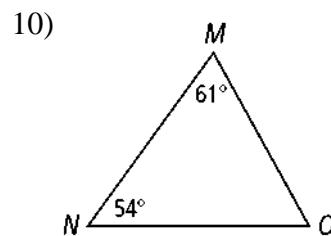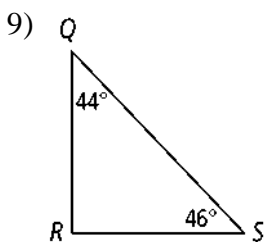
2)
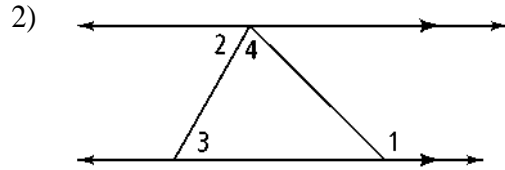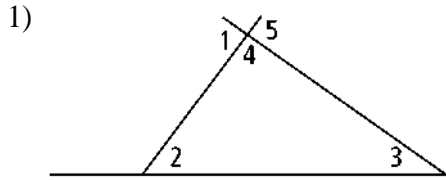
List the angles of each triangle in order from smallest to largest.

3)

4)

5)

6)

7) $\triangle ABC$, where $AB = 17$, $AC = 13$, and $BC = 29$

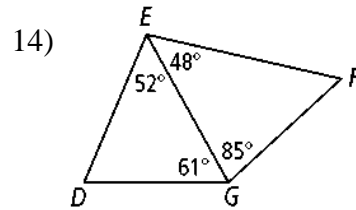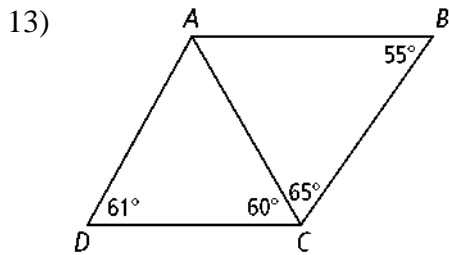8) $\triangle MNO$, where $MN = 4$, $NO = 12$, and $MO = 10$

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

9)

10)

11) △ABC, with m∠A = 99, m∠B = 44, and m∠C = 37   12) △ABC, m∠A = 122, m∠B = 22, and m∠C = 36

Determine which side is shortest in the diagram.

13)

14)

Can a triangle have sides with the given lengths? Explain.

15) 8 cm, 7 cm, 9 cm   16) 7 ft, 13 ft, 6 ft

17) 20 in., 18 in., 16 in.   18) 3 m, 11 m, 7 m

The lengths of two sides of a triangle are given. Describe the possible lengths for the third side.

19) 5, 11   20) 12, 12

21) 25, 10   22) 6, 8

23) List the sides in order from shortest to longest in $\triangle PQR$, with
     $m\angle P = 45$, $m\angle Q = 10x + 30$, and $m\angle R = 5x$.

24) A student draws a triangle with a perimeter 36 cm. The student says that the longest side measures 18 cm.
     How do you know that the student is incorrect? Explain.