5-2 Relationship between Side length and Angle measurement

Name _____

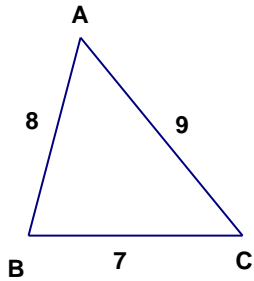**Figure 1**

A
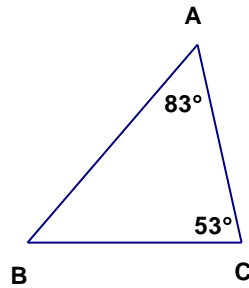8   9
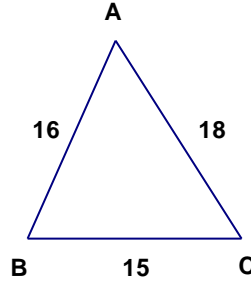B   7   C

Figure 2

A
83°
53°
B   C

Figure 3

A
16   18
B   15   C

Figure 4

A
75°   65°
B   C

Figure 5

A
57° 60°
B 63°   59° D
60° 61°
C

Figure 6

A
63° 60°
B 57°   61° D
60° 59°
C

_____ 1. Which angle is the largest angle in figure 1 above?
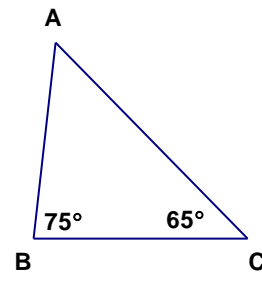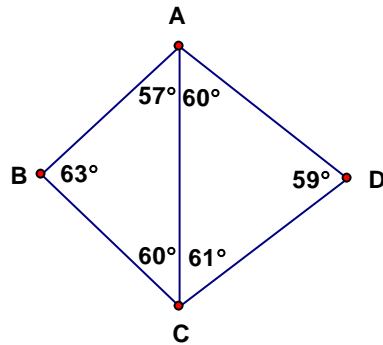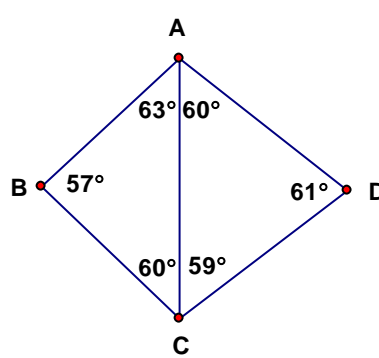
_____ 2. Which side is the longest side in figure 2 above?

_____ 3. Which angle is the largest angle in figure 3 above?

_____ 4. Which side is the longest side in figure 4 above?

_____ 5. Which angle is the smallest angle in figure 1 above?

_____ 6. Which side is the smallest side in figure 2 above?

_____ 7. Which angle is the smallest angle in figure 3 above?

_____ 8. Which side is the smallest side in figure 4 above?

_____ 9. Which side is the longest side in figure 5 above?

_____ 10. Which side is the longest side in figure 6 above?

_____ 11. In $\triangle RST$ $\angle R = x+10$, $\angle S = x+5$, and $\angle T = 3x-35$. Choose the list of sides of $\triangle RST$ that are ordered correctly from longest to shortest.

     A. $\overline{TR},\overline{RS},\overline{ST}$ B. $\overline{ST},\overline{RS},\overline{TR}$ C. $\overline{RS},\overline{ST},\overline{TR}$ D. $\overline{ST},\overline{TR},\overline{RS}$

_____ 12. In $\triangle RST$ $\angle R = 4x+20$, $\angle S = 5x$, and $\angle T = x+60$. Choose the list of sides of $\triangle RST$ that are ordered correctly from longest to shortest.

     A. $\overline{TR},\overline{RS},\overline{ST}$ B. $\overline{ST},\overline{RS},\overline{TR}$ C. $\overline{RS},\overline{ST},\overline{TR}$ D. $\overline{ST},\overline{TR},\overline{RS}$

_____ 13. In $\triangle RST$ $\angle R = 60$, $\angle S = 2x+40$, and $\angle T = x+20$. Choose the list of sides of $\triangle RST$ that are ordered correctly from longest to shortest.

     A. $\overline{TR},\overline{ST},\overline{RS}$ B. $\overline{ST},\overline{RS},\overline{TR}$ C. $\overline{RS},\overline{ST},\overline{TR}$ D. $\overline{ST},\overline{TR},\overline{RS}$

_____ 14. In $\triangle RST$ $\angle R = 6x+30$, $\angle S = 15x-5$, and $\angle T = x+45$. Choose the list of sides of $\triangle RST$ that are ordered correctly from longest to shortest.

     A. $\overline{TR},\overline{ST},\overline{RS}$ B. $\overline{ST},\overline{RS},\overline{TR}$ C. $\overline{RS},\overline{ST},\overline{TR}$ D. $\overline{ST},\overline{TR},\overline{RS}$

Consider the figure below. Write an inequality ($>$, $<$) relating the two angles.
Figure is not drawn to scale and the measurements are not mathematically true.

15. $\angle JMK$ _____ $\angle MJX$ 16. $\angle MKJ$ _____ $\angle MKL$
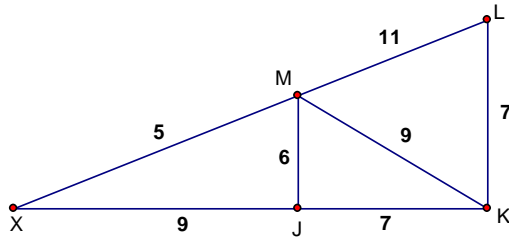
17. In $\triangle ABC$ $\angle A = 4x$, $\angle B = 3x-15$, and $\angle C = 4x+30$.
Determine the longest and shortest side of $\triangle ABC$.

   Largest = _____   Shortest = _____

18. In $\triangle ABC$ A = (0, 4), B = (2, -3), and C = (3, 1).
Determine which angle is largest and which is smallest.

   Largest = _____   Smallest = _____