

Describe the possible lengths of the third side of the triangle given the lengths of the other two sides.

1. 6 in., 9 in.

2. 4 ft, 12 ft

3. 21 yd, 16 yd

4. Two airplanes leave the same airport heading in different directions. After 2 hours, one airplane has traveled 710 miles and the other has traveled 640 miles. Describe the range of distances that represents how far apart the two airplanes can be at this time.



Decide whether the numbers can represent the side lengths of a triangle. If they can, classify the triangle as *right*, *acute*, or *obtuse*.

5. 5, 12, 13

6. $\sqrt{8}$, 4, 6

7. 20, 21, 28

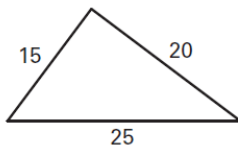
8. 9, 6, 19

9. $\sqrt{13}$, 10, 12

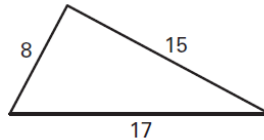
10. 14, 48, 50

Tell whether the triangle is a right triangle.

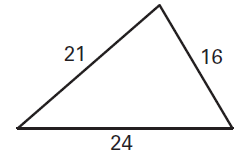
11.



12.



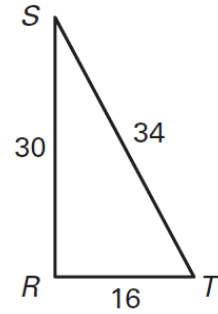
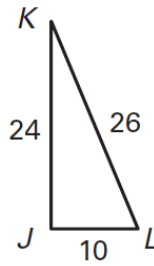
13.



In exercises 14 and 15, complete the statement with $<$, $>$, or $=$, if possible. If it is not possible, explain why.

14. $m\angle J$ _____ $m\angle R$

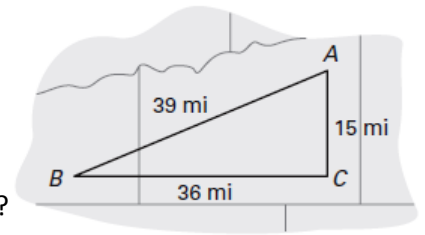
15. $m\angle K + m\angle L$ _____ $m\angle S + m\angle T$



16. The distances between three towns are given in the diagram.

a) Is the triangle ($\triangle ABC$) formed by the three towns a right triangle?

b) Town B is directly west of town C. Is town A directly north of town C?



Answer Key:

- | | | |
|---|---------------------------------------|---------------------------------------|
| 1. $3 \text{ in.} < x < 15 \text{ in.}$ | 2. $8 \text{ ft} < x < 16 \text{ ft}$ | 3. $5 \text{ yd} < x < 37 \text{ yd}$ |
| 4. The two airplanes are between 70 miles and 1350 miles apart. | | |
| 5. yes; right | 6. Yes; obtuse | 7. Yes, acute |
| 8. Not a triangle | 9. Yes, obtuse | 10. Yes, right |
| 11. No | 12. Yes | 13. No |
| 14. = | 15. = | 16. a) Yes b) Yes |