Name _____ **Hour** _____

Is it possible to construct a triangle with the given side lengths?

1. 3, 4, 5

2. 15, 17, 33

3. 1, 2, 3

4. $\sqrt{31}$, 8, 12

5. 5, $3\sqrt{5}$, $\sqrt{122}$

6. $2\sqrt{2}$, $\sqrt{26}$, $4\sqrt{5}$

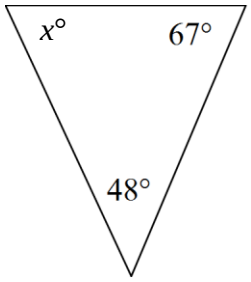
Describe the possible lengths of the third side of the triangle given the lengths of the other two sides.

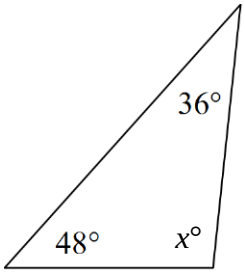
7. 6 cm and 9 cm

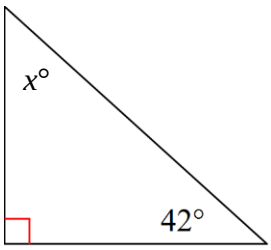
8. 4 in. and 12 in.

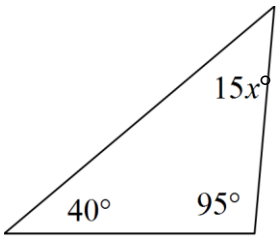
9. 21 ft and 16 ft

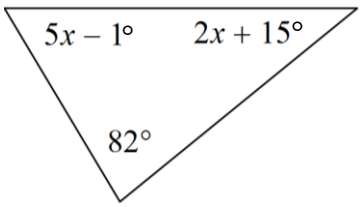
Find the value of *x*.

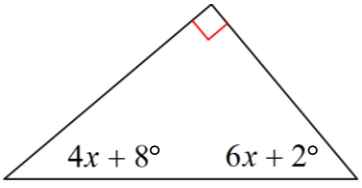
10. 

11. 

12. 

13. 

14. 

15. 

Triangles #1

The variable expressions represent the angle measures of a triangle. Find the measure of each angle.

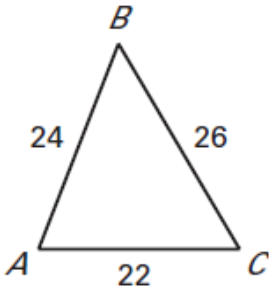
16. $m\angle A = 2x°$
    $m\angle B = x°$
    $m\angle C = (x-20)°$

17. $m\angle A = (6x+11)°$
    $m\angle B = (3x+2)°$
    $m\angle C = (5x-1)°$

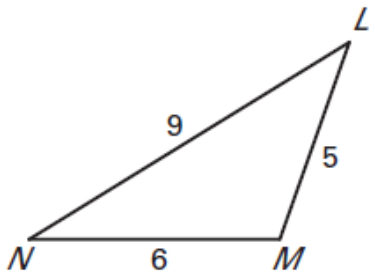
18. $m\angle A = 2x°$
    $m\angle B = (3x-10)°$
    $m\angle C = (110-x)°$

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

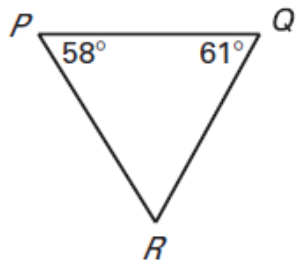
19.



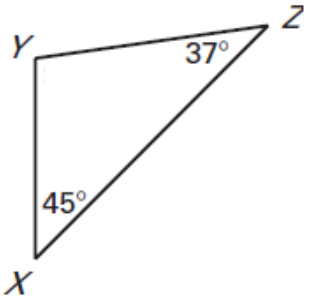
20.



21.



22.



Sketch and label the triangle described.

23. Side lengths: 14, 17, and 19, with the longest side on the bottom
    Angle measures: 45°, 60°, and 75°, with the smallest angle at the right

24. Side lengths: 32, 34, and 48, with the shortest side arranged vertically at the right.
    Angle measures: 42°, 45°, and 93°, with the largest angle at the top