

## Lesson 5-4

## Example 1

State whether it is possible to have a triangle with sides of the given lengths.

a. 4, 5, 10

b. 6, 8, 5

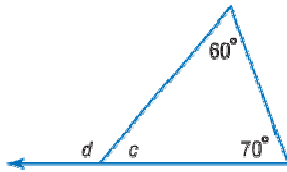
## Solution

- a. It is not possible because  $4 + 5 = 9$ , which is not greater than the length of the remaining side, which is 10.
- b. It is possible because  $6 + 8 = 14$ ,  $6 + 5 = 11$ , and  $8 + 5 = 13$ . In each case, the sum of any two sides is greater than the third side.

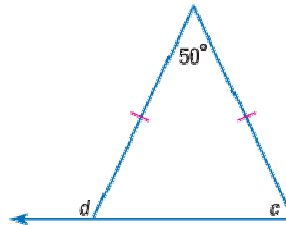
## Example 2

Find the values of  $c$  and  $d$ .

a.



b.



## Solution

- a. According to *Property 1*,  $c + 60^\circ + 70^\circ = 180^\circ$ .  
 $c = 180^\circ - 60^\circ - 70^\circ = 50^\circ$

Using *Property 4*,  $d = 60^\circ + 70^\circ = 130^\circ$

- b. Since the triangle is isosceles, the base angles are congruent.  
 $c + c = 180^\circ - 50^\circ$        $d = 50^\circ + 65^\circ = 115^\circ$   
 $2c = 130^\circ$   
 $c = 65^\circ$