
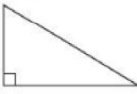
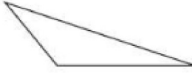
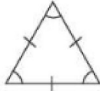
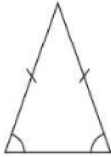



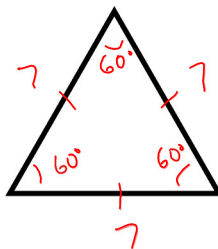
## Lesson 1 Properties of Triangles

Triangles can be classified by their side lengths or by the sizes of the interior angles.

TRIANGLES CLASSIFIED BY ANGLE MEASURE		
acute	all three angle measures are less than $90^\circ$	
right	one angle measure is $90^\circ$	
obtuse	one angle measure is greater than $90^\circ$	

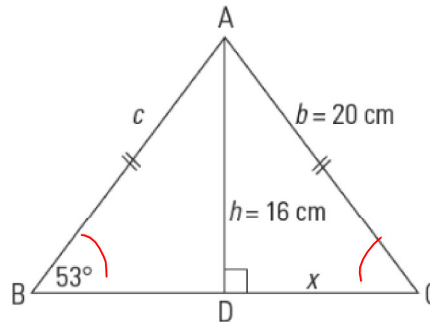
TRIANGLES CLASSIFIED BY SIDE LENGTH		
equilateral	three sides are of equal length and three angles are of equal measure	
isosceles	two sides are of equal length and two angles are of equal measure	
scalene	all sides are of different lengths and no angles are of equal measure	

\*Labelling a triangle means indicating all sides that are equal and all angles that are equal. (as shown above)



Example 1

Use the following diagram to answer the questions below.



a.) State the length of side AB.

20cm

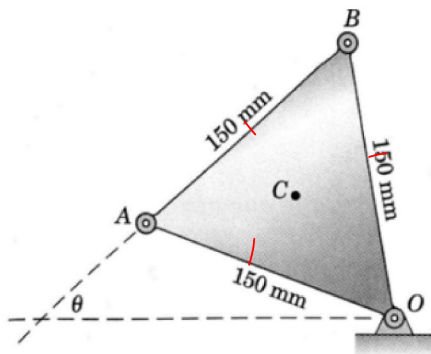
b.) State the measure of angle C.

53°

c.) Classify  $\triangle ABC$  by angle measurement and by side length.

isosceles, acute triangle

Example 2



*all sides are equal  
 $\therefore$  all angles are equal  
 $180 \div 3 = 60^\circ$*

a.) State the measure of angle A in  $\triangle ABO$ .

60°

*\*All equilateral triangles have 3 angles measuring 60°*

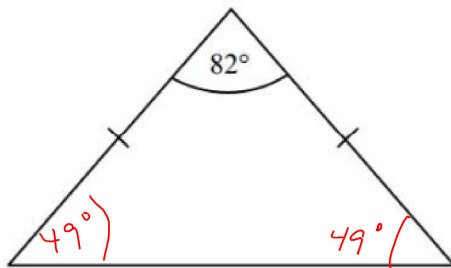
b.) Classify  $\triangle ABO$  by angle measurement and by side length.

equilateral, acute triangle

Example 3

The angle at the top of the following isosceles triangle is  $82^\circ$ .

Calculate the measure of one of the base angles.



$$180^\circ - 82^\circ = 98^\circ$$

split evenly  
between two  
remaining  
angles

$$98^\circ \div 2 = 49^\circ$$

