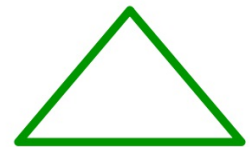


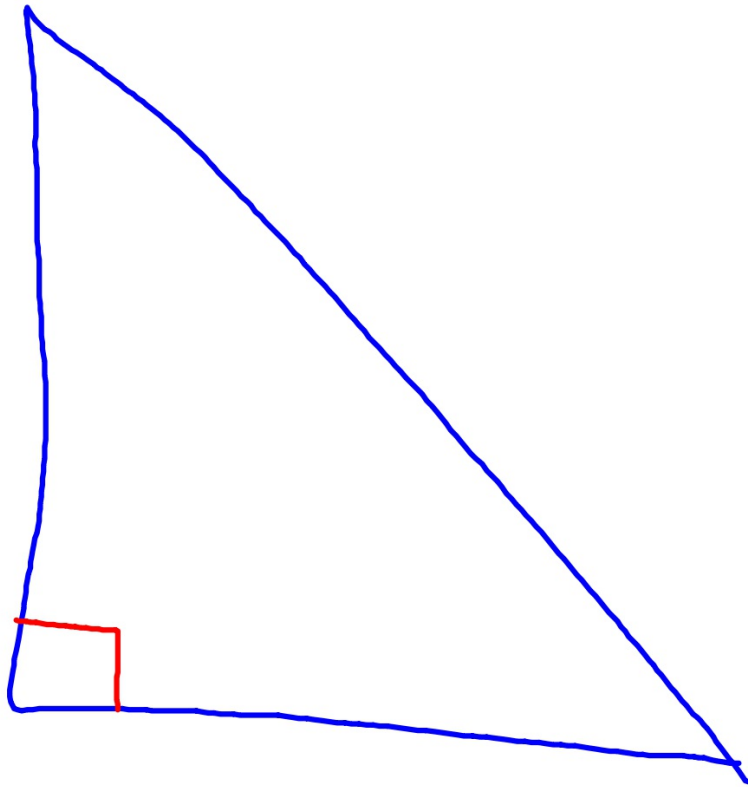
## 7.3 Triangles

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### Learning Targets

- Classify Triangles Using Angles
- Classify Triangles Using Sides
- Construct a Triangle Given Angles
- Construct a Triangle Given Side Lengths



# Congruent



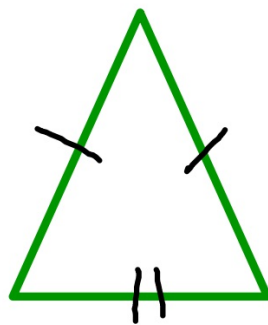
Congruent Angles have the same measure

$m\angle 1 = m\angle 4$  (labeled with arcs)



$m\angle 2 = m\angle 5$

Congruent Sides are the same length

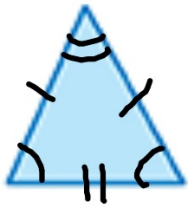


(labeled with lines)

Learning  
Target 1

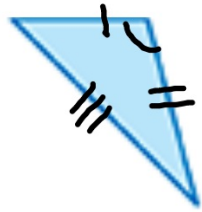
## Classify Triangles Using Angles

Isosceles



Acute

Scalene



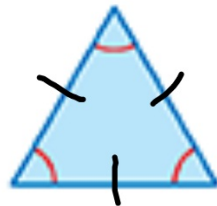
obtuse

Scalene



Right

Equilateral

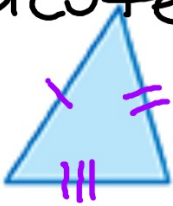


Equiangular

Learning  
Target 2

## Classify Triangles Using Sides

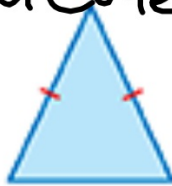
scalene  
triangle  
acute



no congruent  
sides

(it leans, or  
it's scattered)

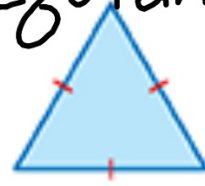
isosceles  
triangle  
acute



2 congruent  
sides

(the two s's  
are like the  
two sides)

equilateral  
triangle  
equiangular



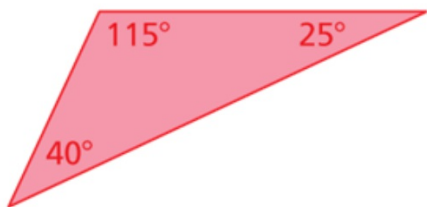
3 congruent  
sides

**EQUAL**

## Classify Using **Angles** and **Sides** (Two Words)

Classify each triangle.

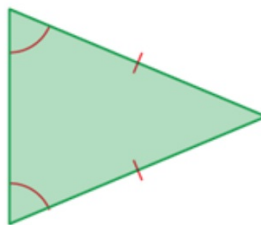
a.



The triangle has one obtuse angle and no congruent sides.

∴ So, the triangle is an obtuse scalene triangle.

b.



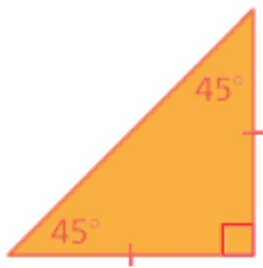
The triangle has all acute angles and two congruent sides.

∴ So, the triangle is an acute isosceles triangle.

Handwritten checkmark

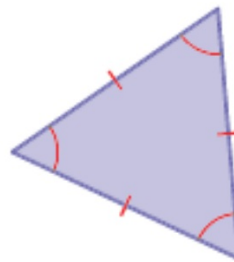
**Classify the triangle.**

1.



right isosceles triangle

2.



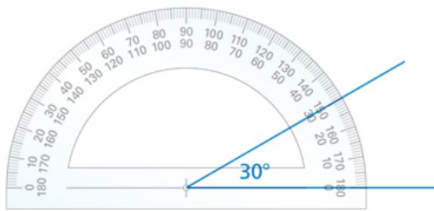
equilateral equiangular triangle

**Learning  
Target 3**

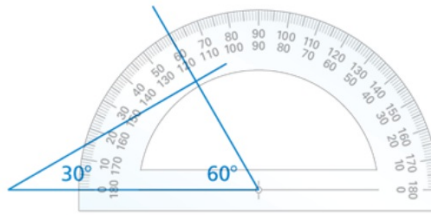
# Construct a Triangle Given the Angle Measures

Draw a triangle with angle measures of  $30^\circ$ ,  $60^\circ$ , and  $90^\circ$ . Then classify the triangle.

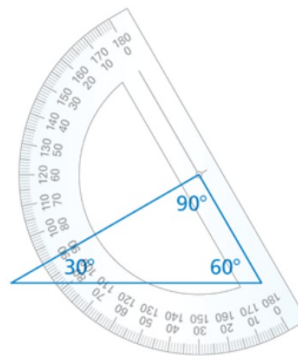
**Step 1:** Use a protractor to draw the  $30^\circ$  angle.



**Step 2:** Use a protractor to draw the  $60^\circ$  angle.



**Step 3:** The protractor shows that the measure of the remaining angle is  $90^\circ$ .



❖ The triangle is a right scalene triangle.

**This Example  
is on Page 285  
in your text.**



**Learning  
Target 4**

## Construct a Triangle Given the Side Lengths

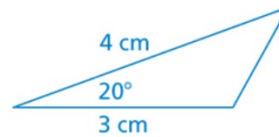
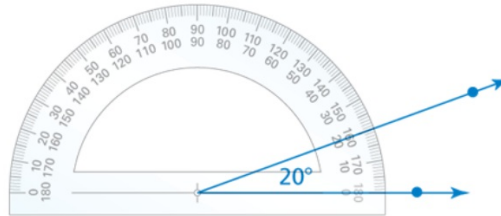
Draw a triangle with a 3-centimeter side and a 4-centimeter side that meet at a  $20^\circ$  angle. Then classify the triangle.

**Step 1:** Use a protractor to draw a  $20^\circ$  angle.

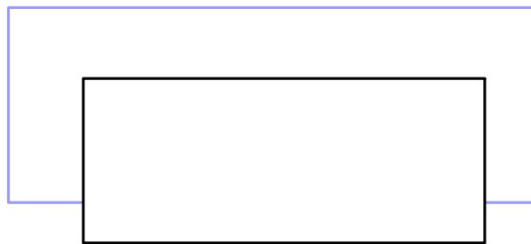
**Step 2:** Use a ruler to mark 3 centimeters on one ray and 4 centimeters on the other ray.

**Step 3:** Draw the third side to form the triangle.

❖ The triangle is an obtuse scalene triangle.



**This Example  
is on Page 285  
in your text.**



# Homework

pg. 286

#1-11 all

#6-11 also find the  
sum of the 3 angles

15-27 odd