





How Can You Classify Triangles? (Topic #1)



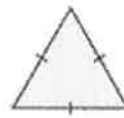
You can use side lengths and angle measures to classify triangles.

Classifying Triangles Using Angles

<i>acute triangle</i>	<i>obtuse triangle</i>	<i>right triangle</i>	<i>equiangular triangle</i>
			
all acute angles	1 obtuse angle	1 right angle	3 congruent angles

Classifying Triangles Using Sides

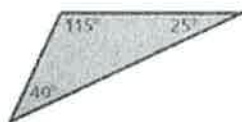
Congruent sides have the same length.

<i>scalene triangle</i>	<i>isosceles triangle</i>	<i>equilateral triangle</i>
		
no congruent sides	at least 2 congruent sides	3 congruent sides

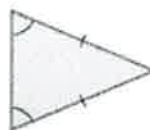
EXAMPLE 1: Classifying Triangles

Classify each triangle according to its angles and sides.

a)



b)

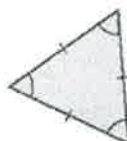


PRACTICE: Classify each triangle according to its angles and sides.

1.



2.

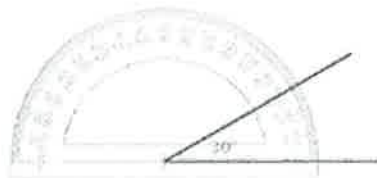


EXAMPLE 2: Constructing a Triangle Using Angle Measurements

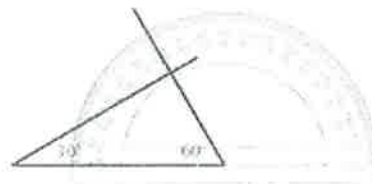
Draw a triangle with angle measures of 30° , 60° , and 90° . Then classify the triangle.

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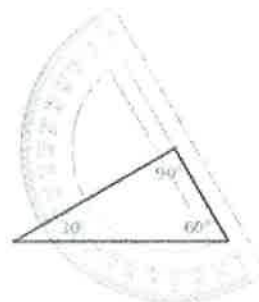
Step 1: Use a protractor to draw the 30° angle.



Step 2: Use a protractor to draw the 60° angle.



Step 3: The protractor shows that the measure of the remaining angle is 90° .



❖ The triangle is a right scalene triangle.

PRACTICE

4. Draw a triangle with angle measures of 45° , 45° , and 90° . Then classify the triangle.

5. Draw a triangle with angle measures of 35° , 45° , and 100° . Then classify the triangle.

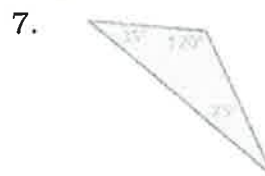
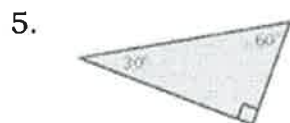
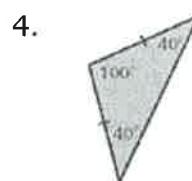
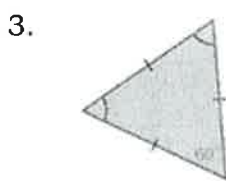
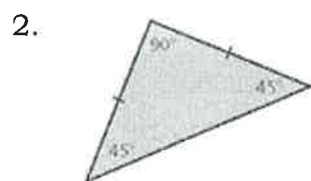
NAME: _____
TRIANGLES

DATE: _____
PERIOD: _____

HOMEWORK #1

1. How can you classify triangles using angles? using sides?

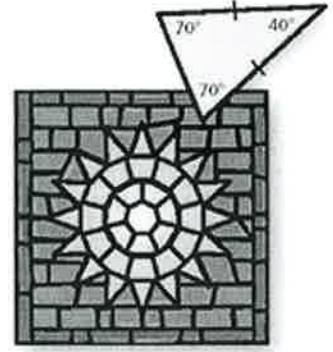
Classify each triangle according to its angles and sides.



8. Describe and correct the error in classifying the triangle.

The triangle is acute and scalene because it has two acute angles and no congruent sides.

9. A mosaic is a pattern or picture made of small pieces of colored material. Classify the triangle used in the mosaic.



10. Draw a triangle with angle measures of 20° , 70° , and 90° . Then classify the triangle.




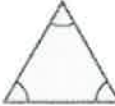
11. Draw a triangle with angle measures of 50° , 30° , and 110° . Then classify the triangle.

12. Draw a triangle with angle measures of 70° , 70° , and 40° . Then classify the triangle.

How Can You Classify Triangles? (Topic #1)



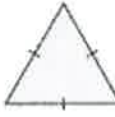
You can use side lengths and angle measures to classify triangles.

Classifying Triangles Using Angles

<p><i>acute</i> triangle</p>  <p>all acute angles</p>	<p><i>obtuse</i> triangle</p>  <p>1 obtuse angle</p>	<p><i>right</i> triangle</p>  <p>1 right angle</p>	<p><i>equiangular</i> triangle</p>  <p>3 congruent angles</p>
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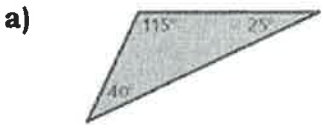
Classifying Triangles Using Sides

Congruent sides have the same length.

<p><i>scalene</i> triangle</p>  <p>no congruent sides</p>	<p><i>isosceles</i> triangle</p>  <p>at least 2 congruent sides</p>	<p><i>equilateral</i> triangle</p>  <p>3 congruent sides</p>
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EXAMPLE 1: Classifying Triangles

Classify each triangle according to its angles and sides.

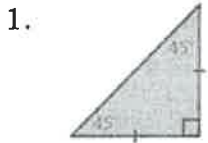


Obtuse
Scalene

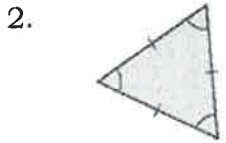


Acute
Isosceles

PRACTICE: Classify each triangle according to its angles and sides.



Right
Isosceles



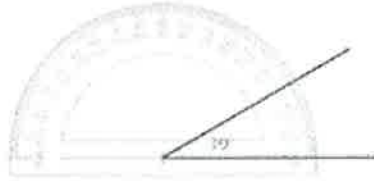
Equiangular
Equilateral

EXAMPLE 2: Constructing a Triangle Using Angle Measurements

Draw a triangle with angle measures of 30° , 60° , and 90° . Then classify the triangle.

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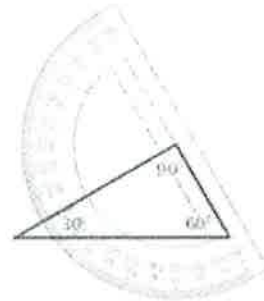
Step 1: Use a protractor to draw the 30° angle.



Step 2: Use a protractor to draw the 60° angle.



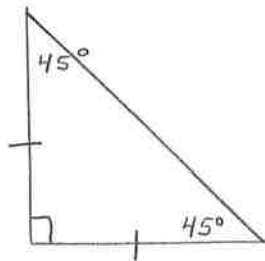
Step 3: The protractor shows that the measure of the remaining angle is 90° .



❖ The triangle is a right scalene triangle.

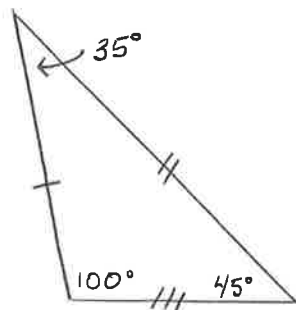
PRACTICE

4. Draw a triangle with angle measures of 45° , 45° , and 90° . Then classify the triangle.



*Right
Isosceles*

5. Draw a triangle with angle measures of 35° , 45° , and 100° . Then classify the triangle.



*Obtuse
Scalene*



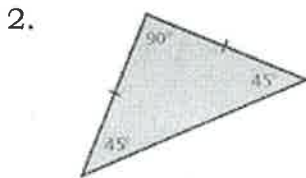
HOMework #1

1. How can you classify triangles using angles? using sides?

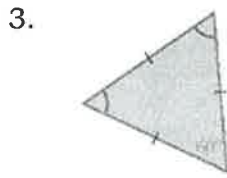
Angles : When a Δ has 3 acute angles, it is an acute Δ .
 When a Δ has 1 obtuse angle, it is an obtuse Δ .
 When a Δ has 1 right angle, it is a right Δ .

Sides : When a Δ has no congruent sides, it is a scalene Δ .
 When a Δ has 2 congruent sides, it is an isosceles Δ .
 When a Δ has 3 congruent sides, it is an equilateral Δ .

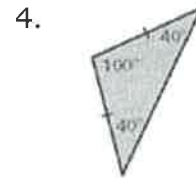
Classify each triangle according to its angles and sides.



Right
 Isosceles



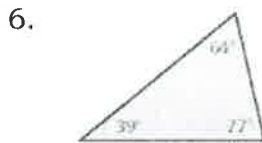
Equiangular
 Equilateral



Obtuse
 Isosceles



Right
 Scalene



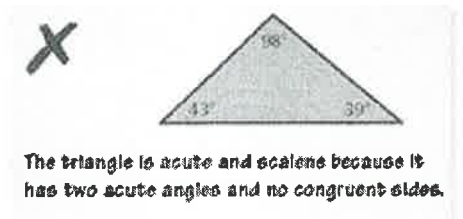
Acute
 Scalene



Obtuse
 Scalene

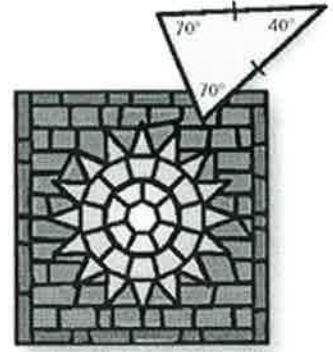
8. Describe and correct the error in classifying the triangle.

The Δ is not an acute Δ b/c acute Δ s have 3 angles less than 90° . The Δ is an obtuse scalene Δ b/c it has one angle greater than 90° and no congruent sides.

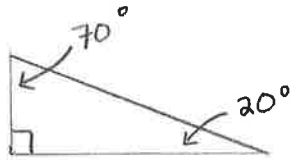


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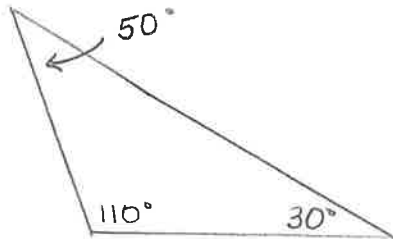
Acute
Isosceles



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