Lesson 7.3

Triangles

Mar 1-11:16 AM

Essential Question

How can you construct triangles?

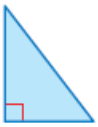
Essential Question

Key Ideas

7.3 Notes

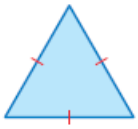
Get out your spiral notebook and protractor too!

Classifying Triangles Using Angles

acute triangle	*obtuse* triangle	*right* triangle	*equiangular* triangle
			
all acute angles	1 obtuse angle	1 right angle	3 congruent angles

Classifying Triangles Using Sides

Congruent sides have the same length.

scalene triangle	*isosceles* triangle	*equilateral* triangle
		
no congruent sides	at least 2 congruent sides	3 congruent sides

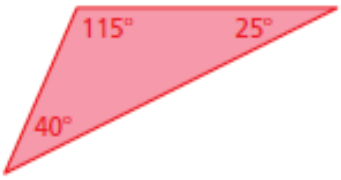
Always go together

Key Idea

Example 1:

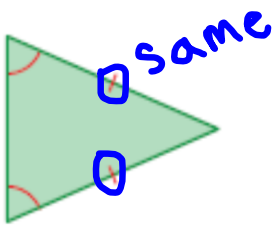
Classify each triangle.

a.



Obtuse ∠ scalene sides

b.

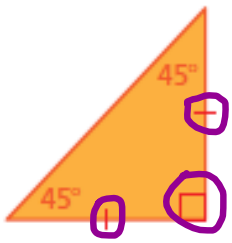


Acute ∠ isosceles sides

Example 1

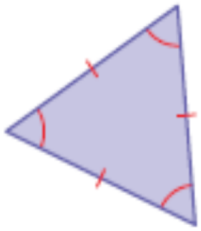
Classify the triangle.

1.



Right Isosceles

2.



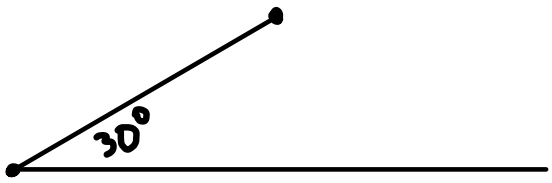
Equiangular Equilateral

On your own 1-2

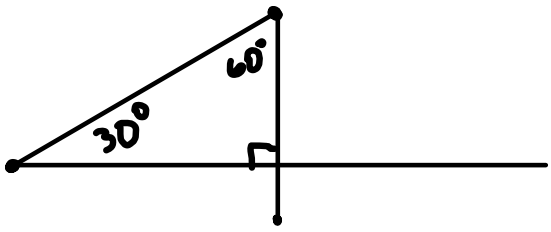
Example 2:

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

1) Draw a 30° angle with a point at the end.



2) Draw a 60° angle centered at that point.



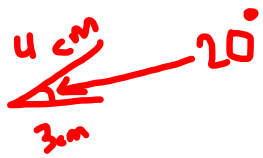
3) Double check all angle measurements.

Example 2

Example 3:

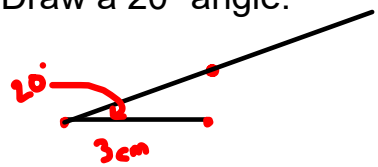
Draw a triangle with a 3-centimeter side and a 4-centimeter side that meet at a 20° angle. Then classify the triangle.

Sketch, should look approximately like this...

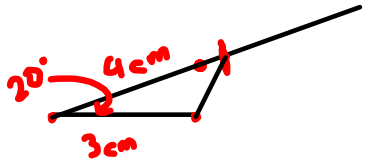


1) Draw a 3cm side.

2) Draw a 20° angle.



3) Measure to 4cm and connect.



Example 3

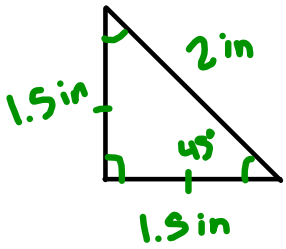
Example 4:

Sketch the following triangles and label the sides and angles.

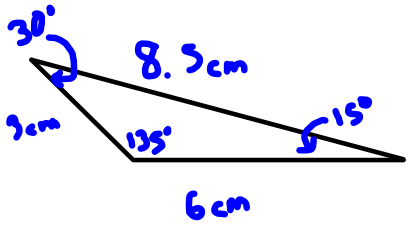
a. right isosceles

b. obtuse scalene.

Right angle, 2 sides the same



Obtuse angle, 3 different sides



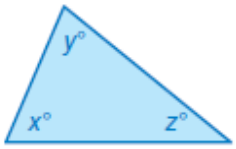
Closure

Key Idea

Sum of the Angle Measures of a Triangle

Words The sum of the angle measures of a triangle is 180°.

Algebra $x + y + z = 180$



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Example 5:

Find each value of *x*. Then classify each triangle.

a.

$28° + 50° + x° = 180°$

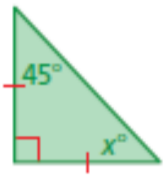
$78° + x° = 180°$

$-78° \quad -78°$

$x° = 102°$

Obtuse Scalene

b.



$90° + 45° + x° = 180°$

$135° + x° = 180°$

$-135° \quad -135°$

$x° = 45°$

Right Isosceles

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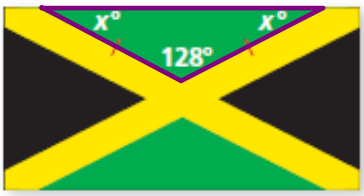
Example 6:

Find each value of *x*. Then classify each triangle.

a. Flag of Jamaica



$128^\circ + 2x^\circ = 180^\circ$

$-128^\circ \quad -128^\circ$

$2x^\circ = 52^\circ$

$\div 2 \quad \div 2$

$x^\circ = 26^\circ$

Obtuse Isosceles

b. Flag of Cuba

$60^\circ + 2x^\circ = 180^\circ$

$-60^\circ \quad -60^\circ$

$2x^\circ = 120^\circ$

$\div 2 \quad \div 2$

$x^\circ = 60^\circ$

Equiangular
Equilateral

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