Geometry 4.1 * 6th grade standard

Identify and classify triangles by angle measures*

Identify and classify triangles by side measures*

acute 0 - 90° all acute

equiangular 3 ≅ ∠s

obtuse 90 - 180° one obtuse

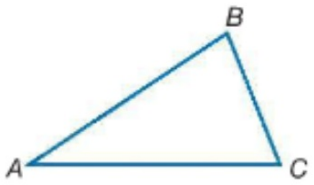
right 90 one right

equilateral 3 ≅

isosceles 2 ≅

scalene all diff

activity: triangle cutouts



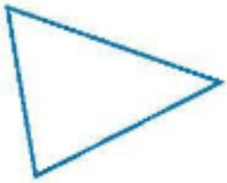
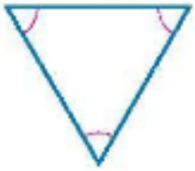
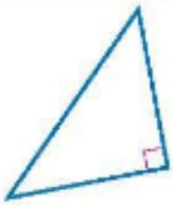
The sides of $\triangle ABC$ are $\overline{AB}$, $\overline{BC}$, and $\overline{CA}$.

The vertices are points A, B, and C.

The angles are $\angle BAC$ or $\angle A$, $\angle ABC$ or $\angle B$, and $\angle BCA$ or $\angle C$.

When is it OK to say <A instead of <BAC?

KeyConcept Classifications of Triangles by Angles

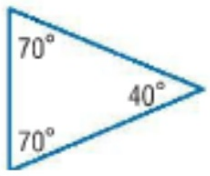
acute triangle	equiangular triangle	obtuse triangle	right triangle
			
3 acute angles	3 congruent acute angles	1 obtuse angle	1 right angle

An equiangular triangle is a special kind of acute triangle.

Example 1 Classify Triangles by Angles

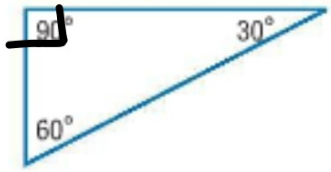
Classify each triangle as *acute, equiangular, obtuse,* or *right*.

a.



acute

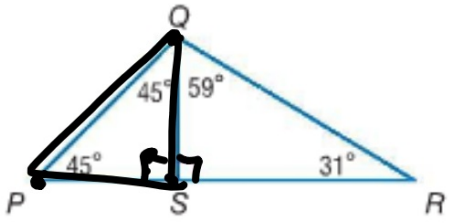
b.



right

Example 2 Classify Triangles by Angles Within Figures

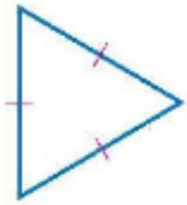
Classify $\triangle PQR$ as *acute, equiangular, obtuse,* or *right*. Explain your reasoning.



2. Use the diagram to classify $\triangle PQS$ as *acute, equiangular, obtuse* or *right*. Explain your reasoning.

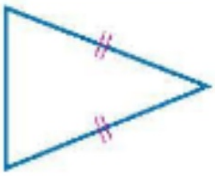
KeyConcept Classifications of Triangles by Sides

equilateral triangle



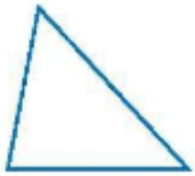
3 congruent sides

isosceles triangle



at least 2 congruent sides

scalene triangle



no congruent sides

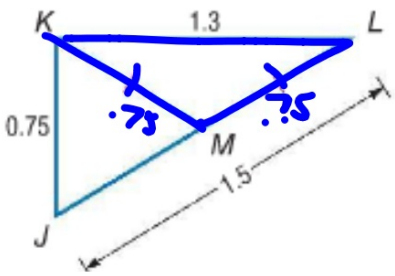
An equilateral triangle is a special kind of isosceles triangle.

Activity: triangle cutouts

take 2 that are different

Example 4 Classify Triangles by Sides Within Figures

If point M is the midpoint of $\overline{JL}$, classify $\triangle JKM$ as *equilateral*, *isosceles*, or *scalene*. Explain your reasoning.

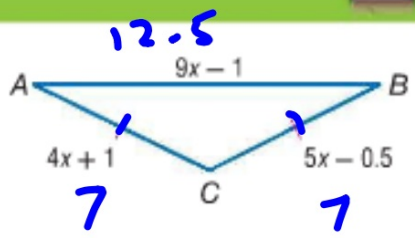


GuidedPractice

4. Classify $\triangle KML$ as *equilateral*, *isosceles*, or *scalene*. Explain your reasoning.

Example 5 Finding Missing Values

ALGEBRA Find the measures of the sides of isosceles triangle ABC.



12.5

$4x+1 = 5x - 0.5$

$-4x \quad -4x \quad +.5$

$1.5 = x$

$5y - 19 = 3y - 3$

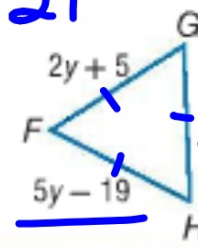
$-3y \quad +19 \quad -3y \quad +19$

$2y = 16$

$y = 8$

GuidedPractice

5. Find the measures of the sides of equilateral triangle FGH.



21

21

21

Construct eq. △

p. 241
15-45 odd
49 51