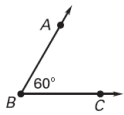## 4.1 Triangle Relationships
Goal: To be able to classify triangles by their sides and angles
Warm Up

Name the vertex and sides of the angle. Then state whether the angle is *acute*, *right*, *obtuse*, or *straight*.
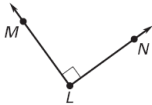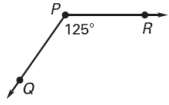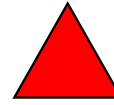
1.

A

60°

B   *C*

2.

X   *Y*   *Z*

3.

M   *N*

L

4.

P

125°   *R*

Q

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Triangle: A figure formed by three segments joining three noncollinear points
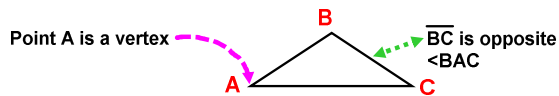
A triangle can be classified by its <u>sides</u> and its <u>angles.</u>

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A **vertex** of a triangle is a point that joins two sides of a triangle.
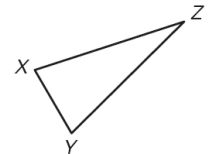
The side across from an angle is the *opposite* side

Point A is a vertex

B

$\overline{BC}$ is opposite <BAC

A   **C**

Nov 4-9:19 PM

Identify the Parts of a Triangle

Name the side that is opposite the angle.
a. ∠X   b. ∠Y   c. ∠Z

Z

X

Y

Name the side that is opposite the angle.
8. ∠J
9. ∠K
10. ∠L

L   *J*

K
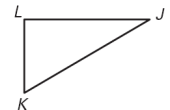
Nov 4-9:20 PM

Classification of Triangles by Sides
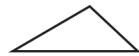
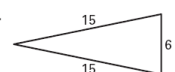| Equilateral Triangle	Isosceles Triangle	Scalene Triangle
A triangle with all sides are congruent	A triangle with two congruent sides	A triangle with no sides congruent

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Classify the triangle by its sides.

a.
10
8
13

b.
7
7   7

c.
15
6
15
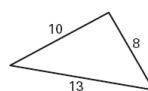
Classify the triangle by its sides.

1.
6
5   5

2.
19
19
19

3.
6   10
8

4.
12
5   10

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1
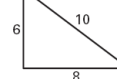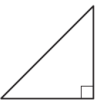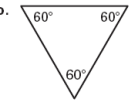
Classification by Angles
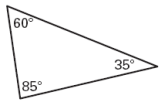
Acute Triangle	Equiangular Triangle	Right Triangle	Obtuse Triangle

A triangle with 3 acute angles   **A triangle with 3 congruent angles**   **A triangle with 1 right angle**   **A triangle with 1 obtuse angle**
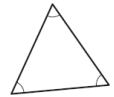
Oct 31-2:35 PM
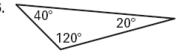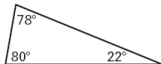
Classify the triangle by its angles.

a.   b. 60° 60° 60°   c. 60° 35° 85°

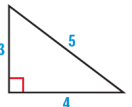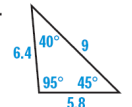**Classify the triangle by its angles.**

5.   6. 40° 20° 120°   7. 78° 80° 22°
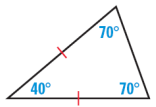
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Classify the triangle by its angles and by its sides.

a. 70° 40° 70°   b. 3 5 4   c. 6.4 40° 9 95° 45° 5.8

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