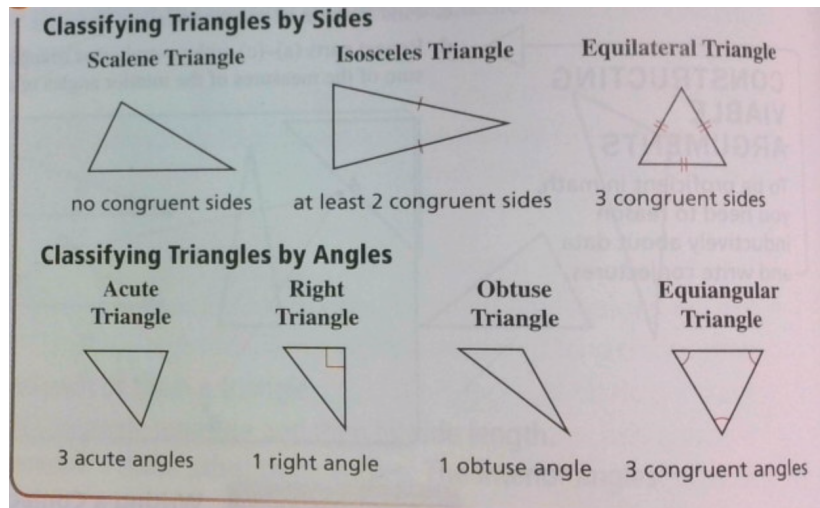


## Geometry - Chapter 5: Congruent Triangles

### 5.1 Angles of Triangles



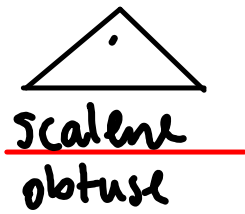
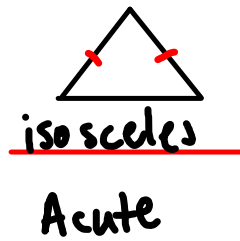
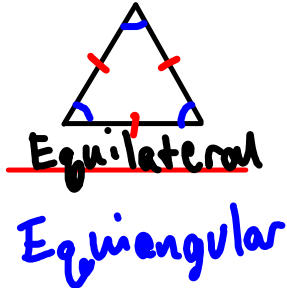
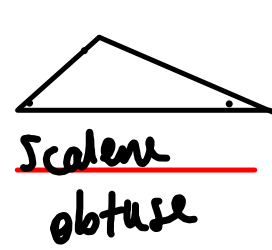
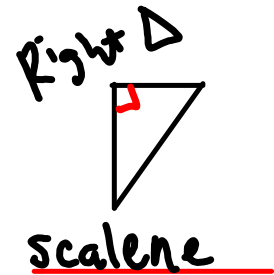
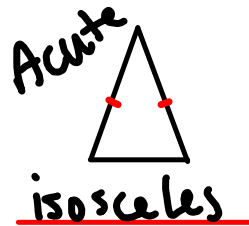
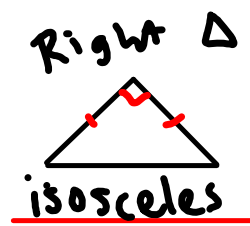
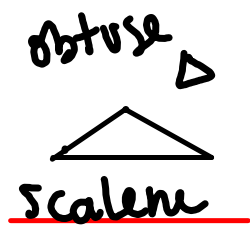
#### Vocab Terms:

Scalene, Isosceles, and Equilateral Triangles

Acute, Right, and Obtuse Triangles

## 5.1 Angles of Triangles

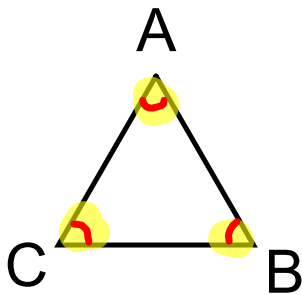
Identify the type of triangles



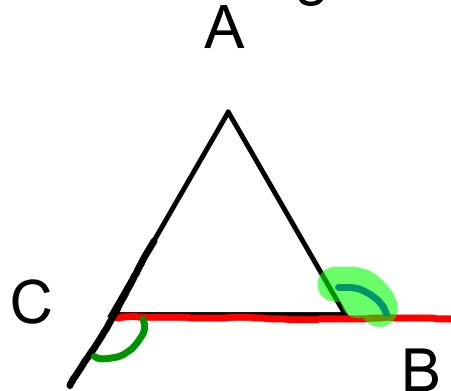
## 5.1 Angles of Triangles

The sum of all interior angles of a triangle is 180 degrees.

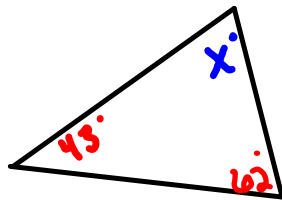
Interior Angles:



Exterior Angles:



Ex: Find the missing angle measure



$$x^\circ + 43^\circ + 62^\circ = 180^\circ$$

$$x^\circ + 105^\circ = 180^\circ$$
$$\begin{array}{r} -105 \\ -105 \end{array}$$

$$x = 75^\circ$$

## 5.1 Angles of Triangles

Problem Solving:

Solve for  $X$  and find all missing interior angles.

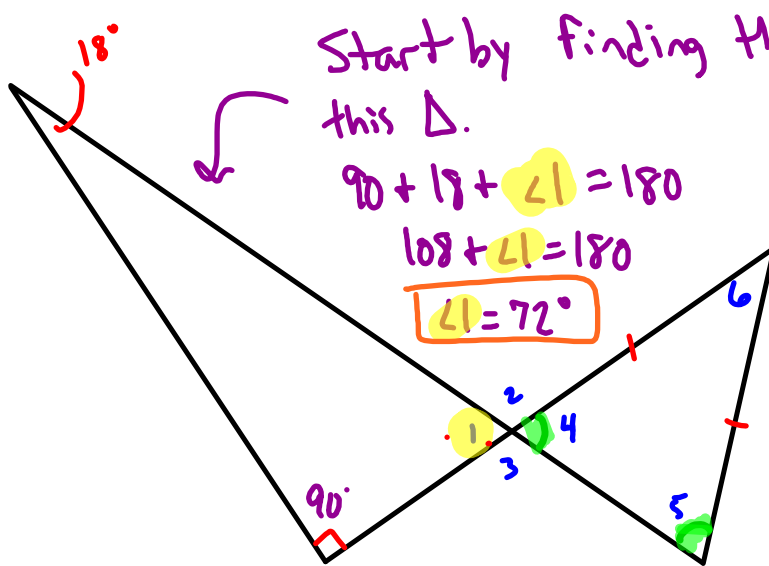
$(2x + 30)^\circ$   
 $47^\circ$   
 $59^\circ$   
 $74^\circ$

Finding missing interior angle:  $47 + 59 + \square = 180$   
 $106 + \square = 180$   
 $-106 \quad -106$   
 $\square = 74^\circ$

$$2x + 30 + 47 = 180$$
$$2x + 77 = 180$$
$$\begin{array}{r} -77 \quad -77 \\ \hline 2x = 103 \\ \hline 2 \quad 2 \end{array}$$
$$x = 51.5$$

## 5.1 Angles of Triangles

Ex: Find the measure of all numbered angles.



Start by finding the 3rd Angle in this  $\Delta$ .

$$90 + 18 + \angle 1 = 180$$

$$108 + \angle 1 = 180$$

$$\boxed{\angle 1 = 72^\circ}$$

$\angle 1$  &  $\angle 4$   
are vertical  
Angles.

$$\boxed{\text{So } \angle 4 = 72^\circ}$$

$\angle 4$  &  $\angle 5$  are  
congruent (they  
have the same symbol on  
the angle)

$$\boxed{\angle 5 = 72^\circ}$$

$$\angle 6 + \angle 4 + \angle 5 = 180$$

$$\angle 6 + 72 + 72 = 180$$

$$\angle 6 + 144 = 180$$

$$\boxed{\angle 6 = 36^\circ}$$

$$\angle 1 + \angle 2 = 180^\circ \quad \leftarrow \text{Straight Angle}$$

$$72^\circ + \angle 2 = 180$$

$$\boxed{\angle 2 = 108^\circ}$$

$\angle 2$  &  $\angle 3$  are congruent because they are vertical  
Angles.  $\boxed{\angle 3 = 108^\circ}$

## 5.1 Angles of Triangles

Homework:

Page 212-213

Numbers: 3-6, 11-17, 29-36

## Attachments

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MOfficePNG.png

MOfficePNG(11052).png