

5-4-18

Aim: SWBAT classify triangles and investigate the relationship between their sides and angles.

HW: [Worksheet \(Highlighted Problems\)](#)

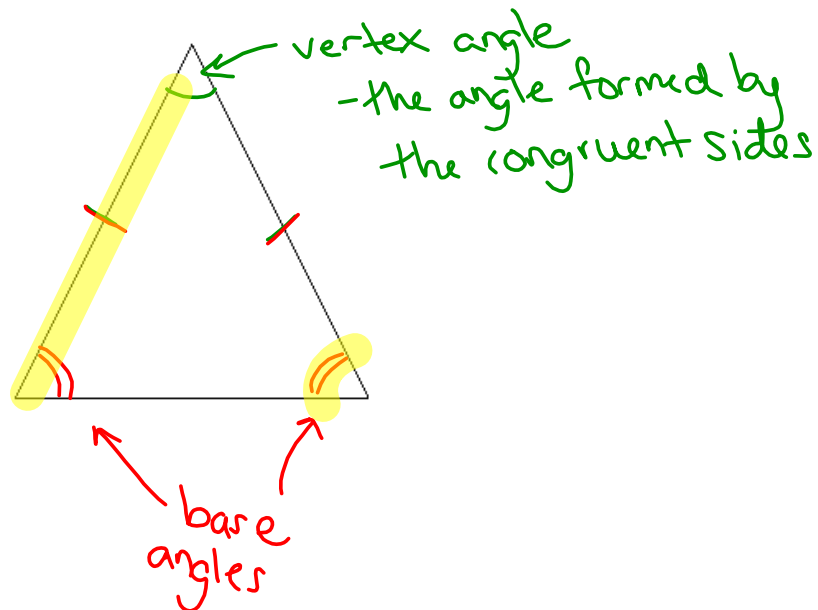
Do Now: Continue notes

**IMPORTANT FACTS**

- The side opposite the largest  $\angle$  is the longest side.
- The side opposite the smallest  $\angle$  is the shortest side.
- The  $\angle$  opposite the longest side is the largest  $\angle$ .
- The  $\angle$  opposite the shortest side is the smallest  $\angle$ .

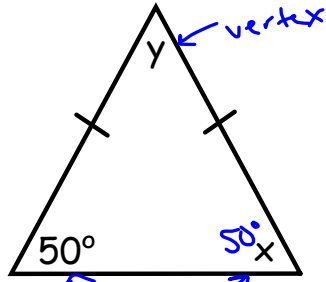
**Notes on Isosceles Triangles:**

- 2 sides are congruent
- Therefore, 2  $\angle$ 's are congruent called the base  $\angle$ 's.
- The angles opposite the congruent sides are also congruent.
- The third remaining angle is called the vertex angle.

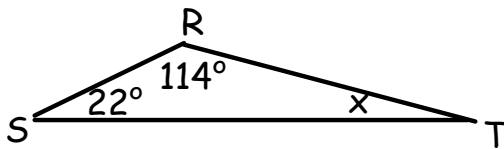


Classwork - Classifying Triangles

Use the following diagram to answer questions 1-4.



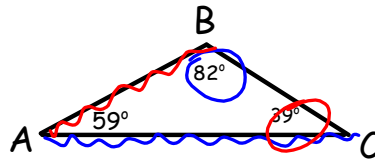
- 1) Find the  $m\angle x$ . 50°
- 2) Find the  $m\angle y$ . 80°
- 3) Classify the triangle by its **sides**. \_\_\_\_\_  
(scalene, isosceles or equilateral)
- 4) Classify the triangle by its **angles**. \_\_\_\_\_  
(acute, obtuse or right)
- 5) Solve for the missing angle **ALGEBRAICALLY**.



- 6) Name the shortest and longest sides of the triangle.

shortest - AB

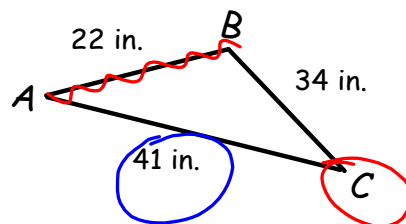
longest - AC



- 7) Name the smallest and largest angles of the triangle.

smallest - ∠C

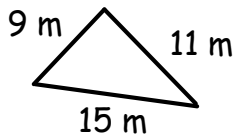
largest - ∠B



Homework - Classifying Triangles

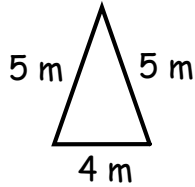
Name each triangle according to the length of its sides.

1)



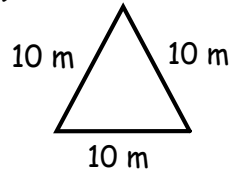
\_\_\_\_\_

2)



\_\_\_\_\_

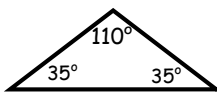
3)



\_\_\_\_\_

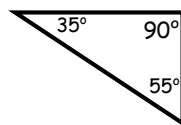
Name each triangle according to the measure of its angles.

4)



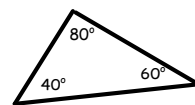
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5)



\_\_\_\_\_

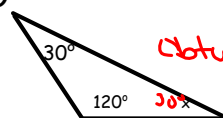
6)



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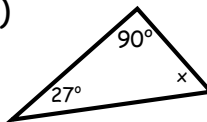
Find the measure of the third angle in each triangle **ALGEBRAICALLY!** Classify each triangle by its sides and angles.

7)



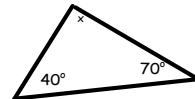
*obtuse*  
 $x + 120 + 30 = 180$   
 $x + 150 = 180$   
 $-150 -150$   
 $x = 30$

8)



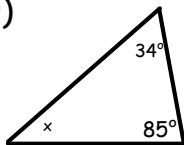
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9)



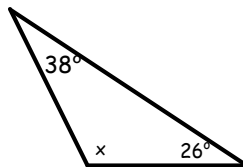
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10)



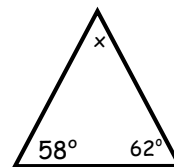
shortest \_\_\_\_\_  
 longest \_\_\_\_\_

11)



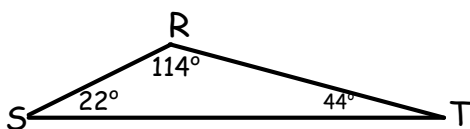
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12)



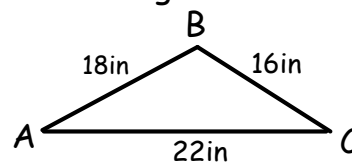
\_\_\_\_\_

13) Name the shortest and longest sides of the triangle.



shortest \_\_\_\_\_  
 longest \_\_\_\_\_

14) Name the largest and smallest angles of the triangle



largest \_\_\_\_\_  
 smallest \_\_\_\_\_

Name: \_\_\_\_\_ Date: \_\_\_\_\_

**AIM: SWBAT set-up and solve an equation to find the missing angle in a triangle.****DO NOW - Use your notes!**Given the following measurements classify each triangle by its **SIDES**.

1) 3 cm, 3 cm, 3 cm

2) 7 m, 5 m, 8 m

3) 6 in, 2 in, 6 in

Given the following measurements classify each triangle by its **ANGLES**.4)  $30^\circ$ ,  $60^\circ$ ,  $90^\circ$ 5)  $42^\circ$ ,  $86^\circ$ ,  ~~$52^\circ$~~ 6)  $110^\circ$ ,  $50^\circ$ ,  $20^\circ$ **CLASSWORK:**

For each question you need to:

- Define a variable (write a let statement)
- Set up an algebraic equation
- Solve the equation
- Write your final answer in a sentence

1) In  $\triangle ABC$ ,  $m\angle A$  is  $36^\circ$  and  $m\angle B$  is  $47^\circ$ . What is the measure of  $\angle C$ ?2)  $\triangle MST$  is an isosceles triangle. A base angle measures  $50^\circ$ . What is the measure of the vertex angle?