

5-12-17

Aim: SWBAT begin to classify triangles by their sides and angles.

Do Now: Packet out

HW: WS

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

**AIM: SWBAT classify triangles by their angles and by their sides.****DO NOW - Review basic triangle facts**The **sum** of the measure of the angles of a triangle is equal to 180 degrees.

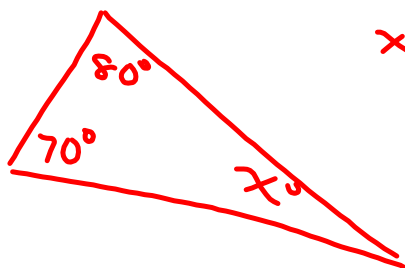
$$m\angle 1 + m\angle 2 + m\angle 3 = \underline{180}$$

How many degrees are in an acute angle? less than 90, but more than 0How many degrees are in a right angle? 90°How many degrees are in an obtuse angle? bigger than 90°, but smaller than 180°Can a triangle have 2 right angles? No Why or why not? 90 + 90 = 180,There is nothing left for a third angle.Can a triangle have 2 obtuse angles? No Why or why not? Two obtuseangles sum to more than 180°.All triangles have **at least 2** acute angles. The third angle determines what type of triangle it is.**Notes:**3 ways to **classify** a triangle by its **angles**:

- 1) Acute - 3 acute angles
- 2) Right - 1 right and 2 acute angles
- 3) Obtuse - 1 obtuse and 2 acute angles

3 ways to **classify** a triangle by its **sides**:

- 1) Equilateral - all sides  $\cong$
- 2) Isosceles - 2  $\cong$  sides
- 3) Scalene - all sides different



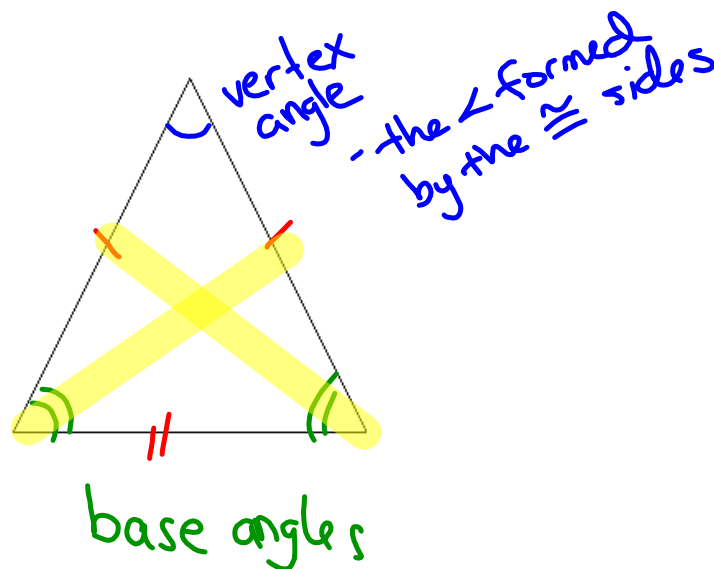
$$\begin{aligned} x + 70 + 80 &= 180 \\ x + 150 &= 180 \\ - 150 &- 150 \\ \hline x &= 30 \end{aligned}$$

**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.

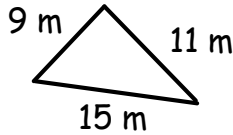


Name: \_\_\_\_\_ Date: \_\_\_\_\_

Homework - Classifying Triangles

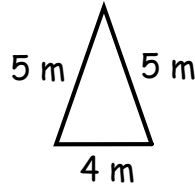
Name each triangle according to the length of its sides.

1)



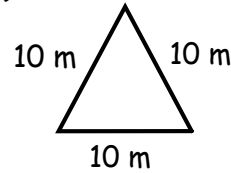
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2)



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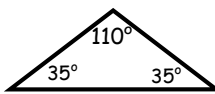
3)



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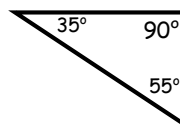
Name each triangle according to the measure of its angles.

4)



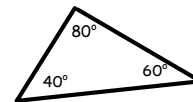
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5)



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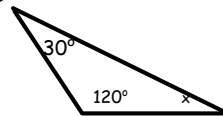
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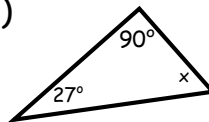
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Find the measure of the third angle in each triangle **ALGEBRAICALLY!** Classify each triangle by its sides and angles.

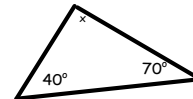
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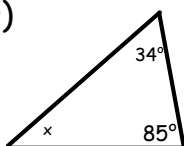
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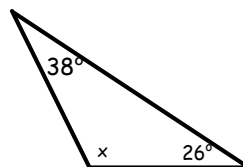
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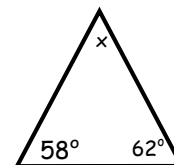
10)



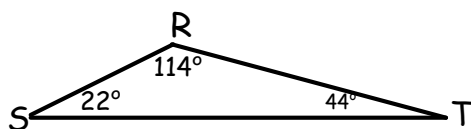
11)



12)

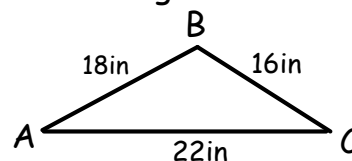


13) Name the shortest and longest sides of the triangle.



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

14) Name the largest and smallest angles of the triangle



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