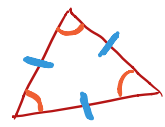
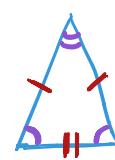
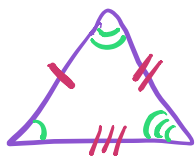
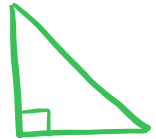


**8-1 Triangles: Angles and Sides!**

**Learning Target:** *I can identify possible side combinations and angle measurements of triangles.*

There are many different types of triangles that you may have already learned about.

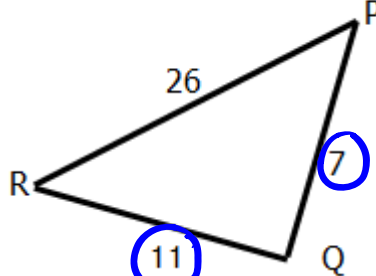
Warm Up: Types of Triangles		
Name of Triangle	Definition	Picture
Equilateral Triangle	all 3 equal sides, all 3 equal angles	
Isosceles Triangle	2 equal sides, 2 equal angles.	
Scalene Triangle	No equal sides, No equal angles.	
<u>Right Triangle</u>	Has a <b>RIGHT ANGLE</b> (90°)	

**Guided Practice: Triangle Inequality Theorem**

The sum of the two smaller sides of the triangle must be greater than the largest third side!

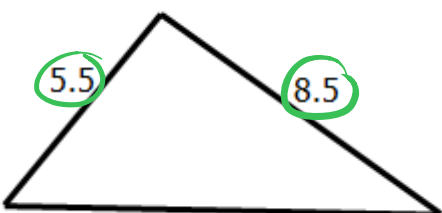
*Exercise 1-* Given the diagrams below; determine whether a triangle can be created. Show your work to justify your answer.

(a)



$7 + 11 > 26$   
 $18 > 26$   
 False  
**NO**

(b)



$8.5 + 5.5 > 10.9$   
 $14 > 10.9$   
 TRUE  
**YES**

Exercise 2- Which of the following numbers **could** represent the side lengths of a triangle?

A) ~~1~~cm, ~~2~~cm, 3.5cm

B) ~~6~~cm, ~~8~~cm, 15cm

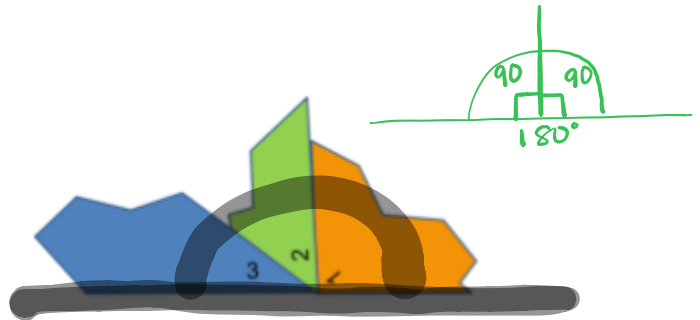
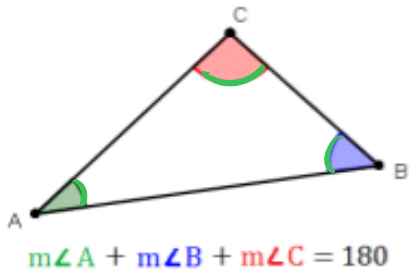
C) ~~5~~cm, 8cm, 15cm

D) 5cm, 7cm, 9cm

**Discovery:** Triangle Angle Sum Activity on the Smart Board

Angles in a Triangle

The interior (inside) angles in a triangle add up to 180 degrees.

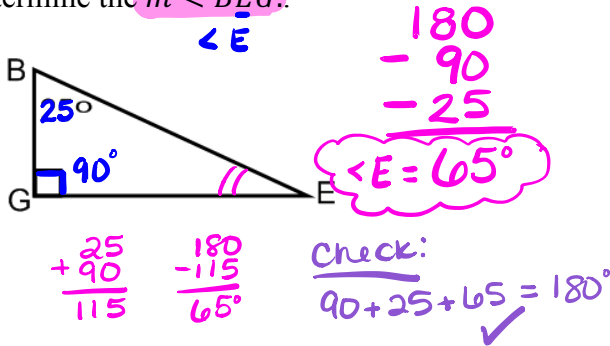


**Guided Practice:** Triangle Interior Angle Sum Theorems

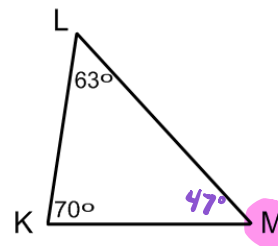
Exercise 1- Show all your work, for the following problems.

(a) Given the measure of  $m\angle EBG = 25$ , determine the  $m\angle BEG$ .

- $\angle B$
- $\angle GBE$
- $\angle EBG$



(b) What is the  $m\angle LMK$ ?



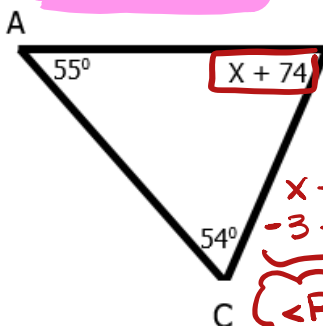
$180 - 63 - 70 = 47^\circ$

OR  $\rightarrow$

$63 + 70 = 133$

$180 - 133 = 47^\circ$

Exercise 3- Find the value of  $x$  in the triangle below. Then find the measure of angle R



$55 + 54 + x + 74 = 180$

$183 + x = 180$

$-183$

$x = -3$

$x + 74$

$-3 + 74$

$\angle R = 71^\circ$

Check:

$55$

$+ 54$

$+ 71$

$180^\circ$

