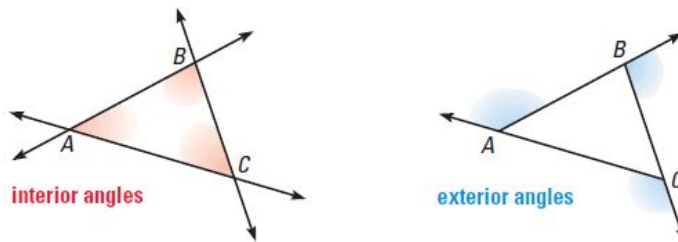


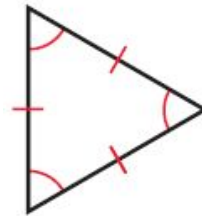
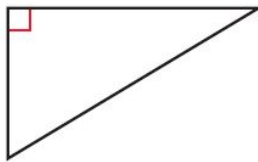
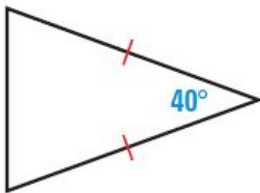
SchoolNova, Math 5c
Homework 18
Triangles and Geometric Proofs
March 1, 2020

Please provide sufficient details about how you solved the problem. More difficult problems are marked with a *. If unable to solve a problem, please present your thoughts and any partial solution.

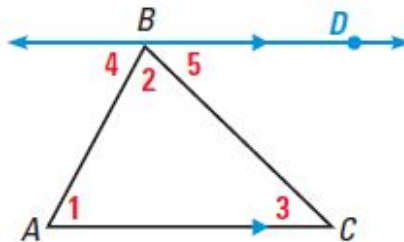
1. The following figures show the interior and exterior angles of a triangle:



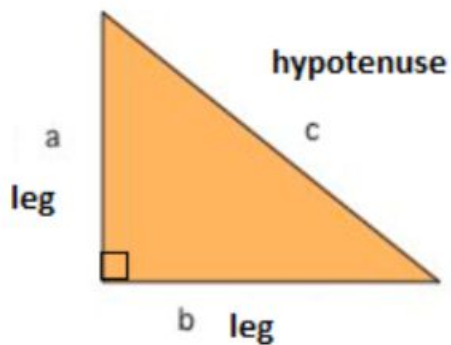
2. Classify the following triangles:



3. For $\triangle ABC$, prove the **triangle sum theorem**, that is, $m\angle 1 + m\angle 2 + m\angle 3 = 180^\circ$.



4. * In the following right triangle, the sides adjacent to the right angle are called the **legs**, and the side opposite to the right angle is called the **hypotenuse**.



The **Pythagoras theorem** for right triangle states that

$$a^2 + b^2 = c^2,$$

where the sides with length a and b are the legs of the triangle, and the side with length c is the hypotenuse. Use the following figure and algebra to prove the Pythagoras theorem:

