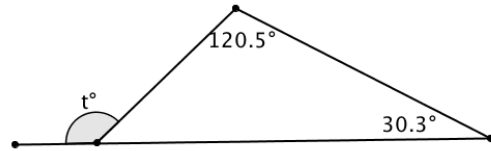
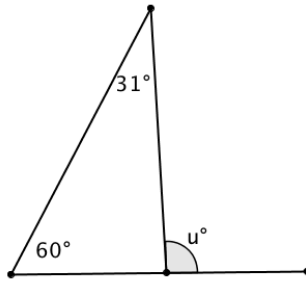
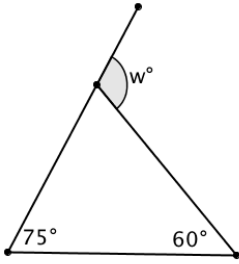


# Exterior Angle of a Triangle

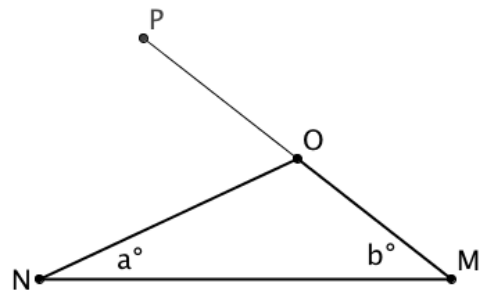
Name \_\_\_\_\_



1. With your partner, find the values for  $w$ ,  $u$ , and  $t$ . Leave your calculations on the paper because the reasoning is more important than just having the right value.
2. These angles  $w$ ,  $u$ , and  $t$  are called exterior angles. (Why?) How did you calculate them?
3. Look at the left triangle. Think about the 2 given interior angles and your result for  $w$ . There is a connection there. What is it?
4. Look at the middle triangle. The interior and exterior angles are different, but is the same connection there?
5. Does the obtuse triangle follow the same relationship?

6. What is  $m\angle NOP$ ?

7. To see why this is true, sketch a line through  $O$  and parallel to  $\overline{MN}$ . Look for a pair of corresponding angles and a pair of alternate interior angles. Mark the congruent angles.



8. Summarize: The exterior angle of a triangle is \_\_\_\_\_

\_\_\_\_\_

# Exterior Angle of a Triangle

Name \_\_\_\_\_