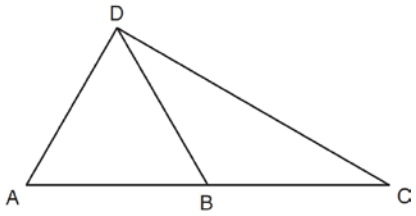
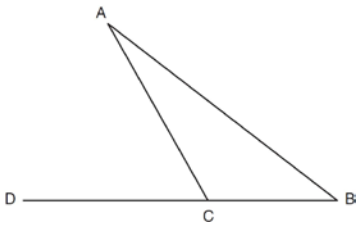
Remote Interior Angles and Triangle Inequality Theorem Name _____
Geometry // Mr. Falci

1. In the diagram below of ΔACD, B is a point on AC such that ΔADB is an equilateral triangle, and ΔDBC is an isosceles triangle with $DB \cong BC$. Find $m\angle C$.

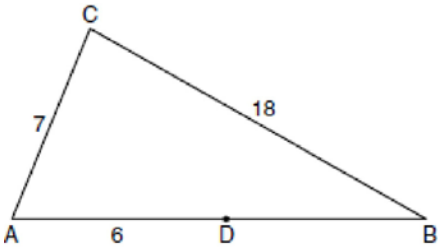


2. If the measures of the angles of a triangle are represented by $2x$, $3x - 15$, and $7x + 15$, classify the triangle by its sides.

3. In the diagram below of ΔABC, side BC is extended to point D, $m\angle A = x$, $m\angle B = 2x + 15$, and $m\angle ACD = 5x + 5$. What is $m\angle B$?



4. In the diagram below of ΔABC, D is a point on AB, $AC = 7$, $AD = 6$, and $BC = 18$. Write an inequality to represent the possible length of the length of DB.



(Not drawn to scale)

5. In ΔPQR, $PQ = 8$, $QR = 12$, and $RP = 13$. List the angles in order from smallest to largest.

6. In ΔABC, $m\angle A = 95$, $m\angle B = 50$, and $m\angle C = 35$. List the segments that make of the sides of the triangle in order from smallest to largest.

7. In an equilateral triangle, what is the difference between the sum of the exterior angles and the sum of the interior angles?