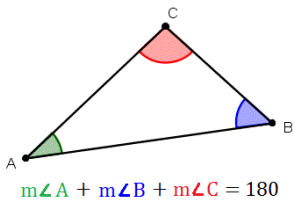Name: _____   Date: _____
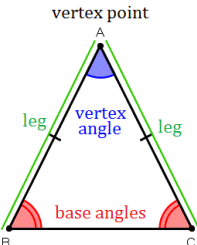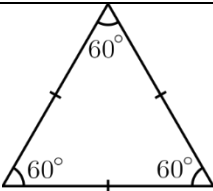
**UNIT 1B**   **LESSON 12**

<div align="center">AIM: HOW DO WE SOLVE FOR UNKNOWN ANGLES IN A TRIANGLE?</div>

| DIAGRAM	FACTS
$m\angle A + m\angle B + m\angle C = 180$	The sum of the 3 angle measures of any triangle is _____
www.analyzemath.com	When one angle of a triangle is a right angle, the other two angles must sum to _____ degrees.
vertex point	Base angles and corresponding sides of an _____ triangle are _____ in measure
	Each angle of an _____ triangle has a measure of _____

In each figure, determine the measures of the unknown (labeled) angles. **Give reasons for your calculations.**

1. Tina wants to sew a piece of fabric into a scarf in the shape of an isosceles triangle, as shown in the accompanying diagram. What are the values of x and y?
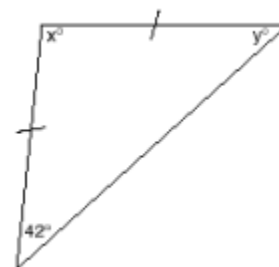
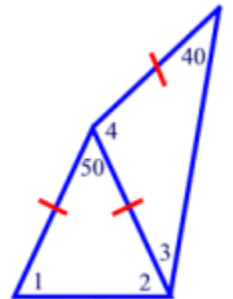REASON: _____

2. In the accompanying diagram of $\triangle ABC$, $m < C = 70°$, $m < CDE = 130°$, and side is extended to A and to E. Find $m < CBA$.
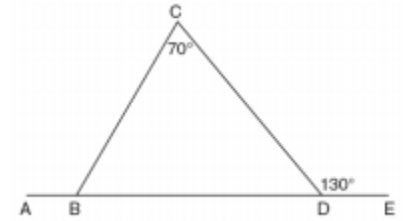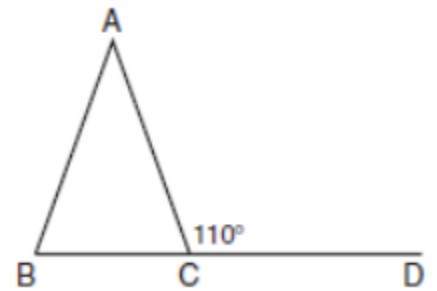
REASON: _____

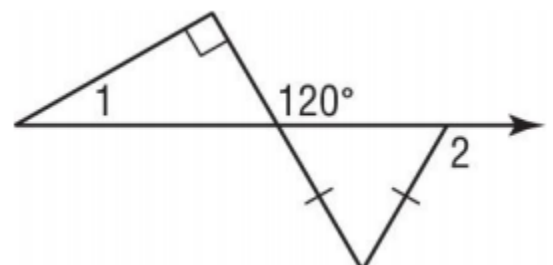3. Find the measurement of each of the unknown angles. State all reasons.

REASON: _____

4. In the accompanying diagram of triangle ABC, $\overline{AB} \cong \overline{AC}$, and exterior angle $ACD = 110°$. What is the measure of $< BAC$?

REASON: _____
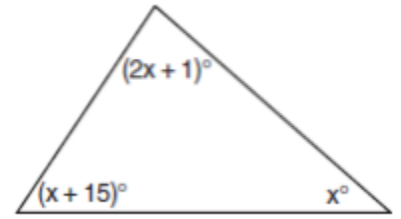
5. What are the measures of < 1 and < 2?

REASON: _____

6. What is the largest angle in the accompanying triangle?

REASON: _____
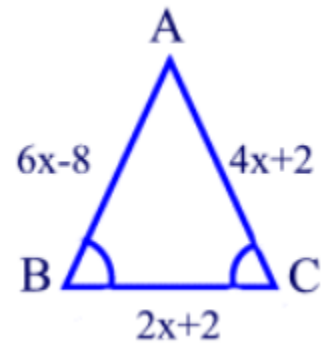
7. If the angle measures of a triangle are $2x, 3x - 15$ and $7x + 15$, then what type of triangle is it?

REASON: _____

8. Triangle *PQR* has angles in the ratio of 2:3:5. What type of triangle is *PQR*?

REASON: _____

9. Determine the measurement of each side in the given triangle.

REASON: _____

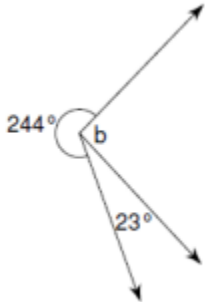|	
1. What Is the measure of < b? 244° b 23°	2. In $\triangle RST, m < RST = 46°$ and $\overline{RS} \cong \overline{ST}$, find $m < STR$.

3. In right triangle $ABC, m < C = 3y - 10, m < B = y + 40$ and $m < 90°$. What type of right triangle is ABC?

   a. Scalene

   b. Isosceles

   c. Equilateral

   d. Obtuse

4. The measure of angles in a triangle are 2:3:4. In degrees, the measure of the *largest* triangle is….

5. If two angles of a triangle are congruent and complementary, then the triangle is

   a. Isosceles and Right

   b. Scalene and Right

   c. Isosceles and Obtuse

   d. Scalene and Acute