Solve Geometric Problems.

   1. **Identify what** you are being asked **to find.**
   2. Determine **which geometric formula** is needed.
      a) **What figure** does the problem refer to?
      b) Draw a picture.
      c) Does the problem involve **distance around** the figure (perimeter or circumference), **area** or **volume**, or **angles**?
   3. **Choose** one variable in the formula and write the other variables in terms of the chosen one.
   4. **Write the formula substituting** each given measurement for the **corresponding variable** in the formula.
   5. **Solve** the equation for the unknown variable. Calculate the other unknowns using this value.
   6. **Write a statement** of your result, refer to #1 above. Be sure to include any **units** such as feet or degrees.


Example 1
Solve each problem.

a) The length of a rectangle is two feet longer than three times the width. The perimeter is 76 feet. Find its dimensions.

b) Each of the two larger angles of a parallelogram measure 9° more than twice the measure of each of the two smaller angles. Find the measures of the four angles.

c) Each of the two equal angles in an isosceles triangle is 24° less than the third angle. Find all three angles.
d) A bookcase is to have four shelves as shown. The height of the bookcase is to be 2 feet more than the width and only 20 feet of lumber is available. What should the width and height be?

![Bookcase Diagram]

e) If angle $A$ and angle $B$ are supplementary angles, and angle $B$ is 15° less than twice angle $A$, find the measures of angles $A$ and $B$.

f) The perimeter of a triangle is 71 inches. Find the three sides is one side is 31 inches larger than the smallest and the third side is three times the smallest.