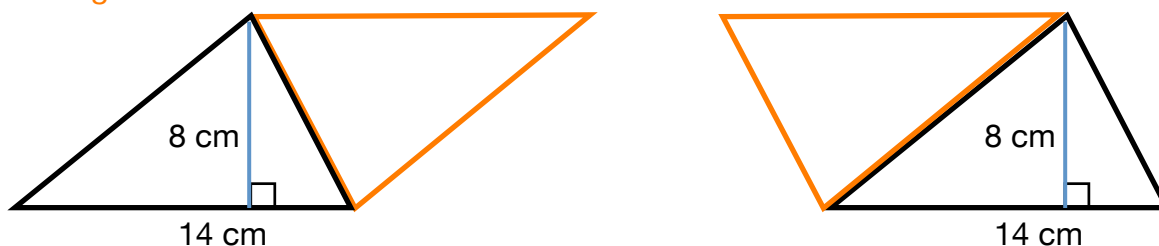**PROBLEM SOLVED**

MAKING SENSE OF MATHEMATICS

1. Trace and cut out **two** copies of the following triangle. Place the two congruent triangles together to form a parallelogram that has the same base and height as the original triangle.
   a. Sketch your results below.
      There are two ways to form a parallelogram with the same base and height as the triangle.
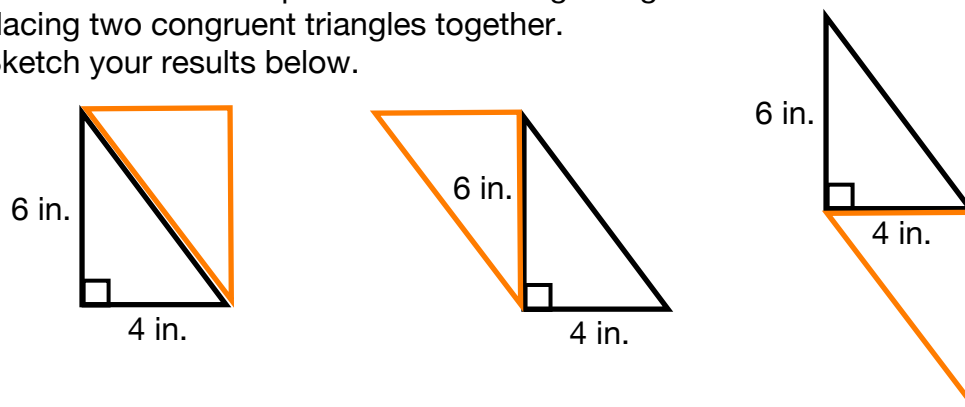

   b. Determine the area of the parallelogram.
      The area is 112 sq. cm. The two parallelograms shown have the same base (14 cm), height (8 cm), and area (14 cm • 8 cm = 112 sq. cm).
   c. Determine the area of one triangle.
      The area of one triangle is half the area of the parallelogram, or 56 sq. cm.

2. Trace and cut out **six** copies of the following triangle. Form three different parallelograms by placing two congruent triangles together.
   a. Sketch your results below.

   b. Identify the base and height of each parallelogram.
      The base of each of the first two parallelograms shown above is 4 in. and the height is 6 in. The base of the third parallelogram is 6 in. and the height is 4 in.
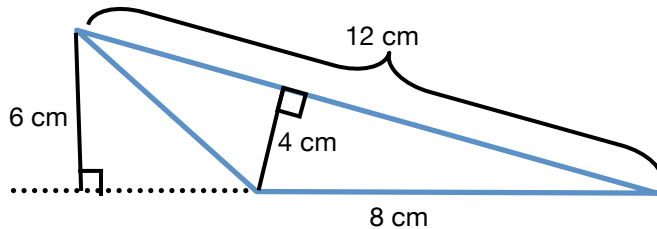   c. Determine the area of each parallelogram.
      All three parallelograms have the same area. The area is 24 sq. in. (6 in. • 4 in. = 24 sq. in.).
   d. Determine the area of one triangle.
      The area of one triangle is half the area of the parallelogram, or 12 sq. in.

MakingSense

3. Show two different ways to find the area of the following triangle.

Method 1:
A = ½bh
A = ½(8)(6)
A = 24 sq. cm

Method 2:
A = ½bh
A = ½(12)(4)
A = 24 sq. cm

4. Allie, Sam, and Jared each designed a kite. Here is what their designs look like. Whose kite has the largest area?
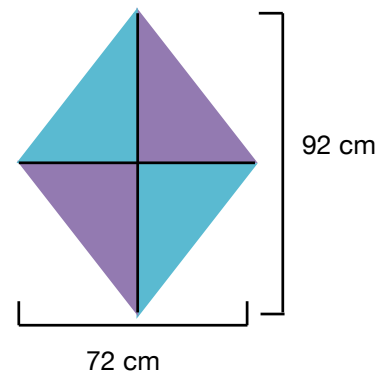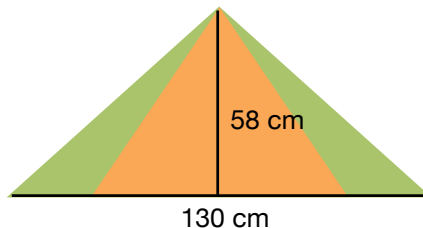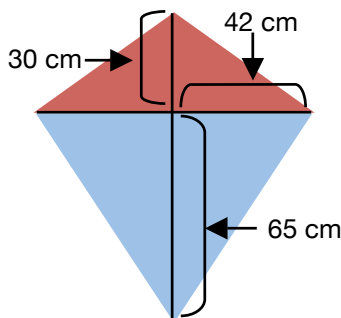
There are several ways to determine the area of each kite. One possible strategy for each kite is shown below.

Kite 1:
top triangle
 A= ½(84)(30)
  = 1260 sq. cm
bottom triangle
 A= ½(84)(65)
  = 2730 sq. cm
total area
 A= 1260 + 2730
  = 3990 sq. cm

Kite 2:
A= ½(130)(58)
  = 3770 sq. cm

Kite 3:
top half of kite
A= ½(72)(46)
  = 1656 sq. cm
entire kite
A= (2)(1656)
  = 3312 sq. cm

The first kite shown above has the largest area.