Notes for **M4S5E1** p. 291-293 #1-8

1.
    a. Cut 3 squares from centimeter grid paper. One square should have side lengths of 3 units, one should have side lengths of 4 units, and one should have side lengths of 5 units.

    b. Describe 2 ways to find the area of one of the squares. Then label each square with its area and the length of one side.

    c. Use your 3 squares to form a triangle. Tape/glue the arrangement into place on construction paper. Label the **2 shorter** sides *a* and *b* and the **longest** side *c*. Is the triangle a right triangle? _____ Explain how you can check.
    _____

    d. What is the relationship between the areas of the 2 smaller squares and the area of the largest square?
    _____
    _____

    e. Do you think this relationship will work for other triangles? _____ How can you find out? _____

2. Follow the steps for Exploration 1 on page 292 with your group.

3.
    a. Are there some sets of squares that will not form a triangle? _____ If so, explain why. _____

    b. Tape/glue each triangle to construction paper.

Use LABSHEET 5A for Questions 4 and 5
4. Follow the directions on the labsheet to complete the *Triangle Table* and classify the triangles made by your group.

5. TRY THIS AS A CLASS Share your group's triangles and data from the *Triangle Table* with the other groups in your class.

    a. Use the extra spaces in the *Triangle Table* to record the data from other groups for any triangles that your group did not make.
    b. How many different triangles did your class find altogether? ____ Do you think that these are all the possible arrangements? ____ How could you find out?
    _____

c. Look at the last 2 columns in the *Triangle Table.* What do you notice about the relationship between the sum of the areas of the smaller squares and the area of the largest square for an acute triangle? _____ a right triangle? _____ an obtuse triangle? _____

IF YOU KNOW THE SIDE LENGTHS OF A TRIANGLE, YOU CAN TELL WHAT TYPE OF TRIANGLE IT IS.

6. What type of triangle is shown in the EXAMPLE on page 293? _____?
Explain _____

7. CHECKPOINT Tell whether a triangle with the given side lengths is *acute, right,* or *obtuse.*
    a. 11cm, 13cm, 20cm _____

    b. 16mm, 18mm, 10mm _____

    c. 17in., 15in., 8in. _____

    d. 6.5cm, 4.2cm, 7.9cm _____

8. Give the side lengths of a triangle (other than a 3-4-5 triangle) that the Egyptian rope stretchers could have used to form a right angle. _____
Sketch a picture of a rope triangle with these new side lengths.