

Name: \_\_\_\_\_ Class time : \_\_\_\_\_

For the following project, use light cardboard. This must be your own original creation.  
Construct a right pyramid with a base that is a regular pentagon such that each edge of the pentagon measures 6 cm. Make your pyramid at least 7 cm high. Note: to achieve this height, you will need to make the sides of your triangles MORE THAN 7 cm. You will show the pyramid to your instructor.

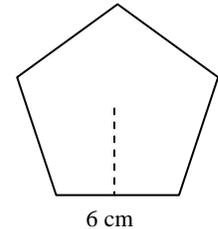
Length of side of pentagon: 6 cm

The dotted line in the sketch is perpendicular to the side of the pentagon and goes to the center of the pentagon. Length of dotted line in sketch: 4.13 cm

Use this information. Do not go to the internet to find a formula to use.

Figure out the area by yourself.

Fill in the rest of this worksheet to turn in.

Work to find the area of the pentagonal base:

Area of the pentagonal base to the nearest  $0.1 \text{ cm}^2$ . \_\_\_\_\_ Note: Use this rounded number for subsequent calculations.

Measure the height of the pyramid (by holding a centimeter ruler in a vertical position next to your upside down pyramid) to the nearest 0.1 centimeter : \_\_\_\_\_

(Please note that this is NOT the same as the length of the dotted line shown below. Ask your instructor if you are unsure of the difference.)

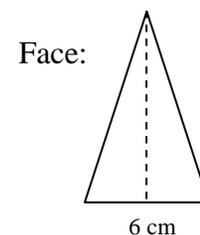
Use the information you have and what you have learned in Math 13900 to find the volume. Do not use a formula from the internet.

Work to find the volume of the pyramid:

Volume of the pyramid to the nearest  $0.1 \text{ cm}^3$ : \_\_\_\_\_

Length of altitude of face (suggested by dotted line in sketch) to the nearest 0.1 cm: \_\_\_\_\_

Work to find the area of one triangular face:



Area of one triangular face to the nearest  $0.1 \text{ cm}^2$ : \_\_\_\_\_

Use that answer in your work to find the surface area of the pyramid. Do not go to the internet to find a formula. Include labels.

Surface area of the pyramid to the nearest  $0.1 \text{ cm}^2$ : \_\_\_\_\_