

Snoopy and the Broken Pots



Your dog Snoopy loves to get into containers, plants, and food items that you leave around the house. Recently, you've been working on creating hand-made Christmas gifts for friends and family. You purchased two different sizes of clay flower pots (medium and large) and started to paint them with holiday designs. However, Snoopy found them on the coffee table, and **CRASH** she knocked them over and shattered them!

Your group has been given some of the shattered pieces of the clay pots that were found at the scene. Your mission is to use these pieces to figure out the original size of the pots, so that you can buy them again. Specifically, you want to find the original radius of the two sizes of pots. Find the radius in three ways:

- 1) Using informal methods
- 2) Using geometric construction techniques with a compass and straight edge
- 3) Using algebraic formulas where the length and width of the arc are known values

Write your solutions on big sheets of paper, and be prepared to present your findings to the class and answer: How do the different methods relate to each other? Which method do you prefer? Why?

Extension: When Snoopy knocked over the flower pots, they were filled with top-grade soil for the holiday flowers you planned to plant in them. How much soil will you need to buy to refill each medium and large flower pot?