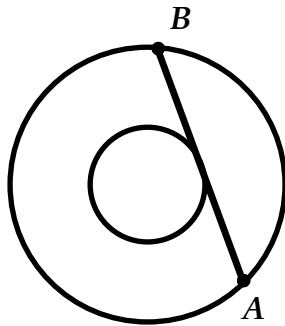


Paper Cup Mathematics Worksheet 2

Geometer's Sketchpad® Investigation

Your group has been hired to paint the floor of a merry-go-round. You need to measure the area of the floor exactly because you do not want to buy extra paint. The carousel is circular and in the middle is a smaller circle, which contains all the machinery for the carousel. Therefore, the carousel platform is an annulus. The only measurement provided is the length of the chord of the outer circle that is also tangent to the inner circle. The measure of segment AB is 70 feet. Find the area of the annulus.



After you have found a solution, complete a construction on *Geometer's Sketchpad*® that models the problem.

1. Draw a segment and construct its perpendicular bisector.
2. Construct a point on the perpendicular bisector. Select the point as the center of the outer circle and also select one of the endpoints of the segment. Construct the outer circle.
3. Construct the inner circle by selecting the center of the outer circle and the midpoint of the segment.
4. Construct the interior of both circles. Measure the areas. How can you determine the area of the annulus?
5. Drag the center of the circles. Describe and explain the results.