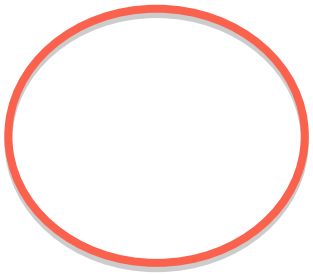
Arc Length

A rotating sprinkler rotates 300 degrees while watering the grass and shoots water out 20 feet.

Determine the section of the edge of the circle not reached by the water.



1. Sketch the scenario on the given circle.

2. Write down the formula for circumference of a circle. _____

3. Using your formula from step 2, what is the actual circumference of the entire circle (watered and non-watered part)?

4. What is the measure of the central angle of the un-watered part of the lawn? _____

5. What fraction of the circle is this? _____

6. How did you calculate the fraction? (i.e. in words, what was the numerator and what was the denominator)

   Numerator

   _____

   Denominator

7. Use your answer from #3 and #5 to find the length of the section of the unwatered part.

8. Using your calculations in step 7, use your formula from step 2 and step 5 to write a formula to find the length of an arc of a circle.

   Arc Length: = _____