

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

Determine the area left to be watered by hand.

1. Sketch the scenario on the given circle.
2. Write down the formula for the area of a circle. \_\_\_\_\_
3. Using your formula from step 2, what is the actual area of the entire circle (watered and non-watered part)? (show work!)
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 that fraction? (i.e. in words, what was the numerator and what was the denominator?)  
  
$$\frac{\text{(numerator)}}{\text{(denominator)}}$$
7. Use your answer from #3 and #5 to find the area of the un-watered part. (again, show your steps!)
8. Using your calculations in step 7, use your formulas from step 2 and step 5 to write a formula to find the area of a sector.

$$\text{Area}_{\text{sector}} = \underline{\hspace{10em}}$$