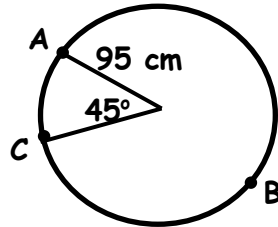


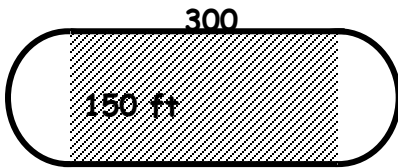
Arc length and sector area applications

C-Level

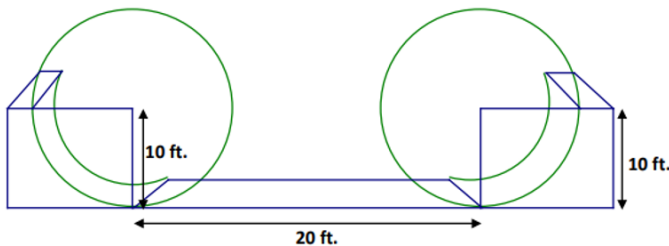
1. The path traced by a golfer's club when he hits the ball is the arc of a circle. If the golf club is 95 cm long, calculate the distance travelled by the head of the club when the golfer swings his club, \widehat{CBA} .



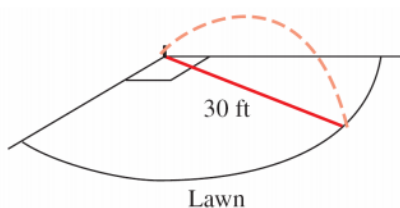
2. The diagram below shows a running track composed of a rectangle and semi-circular ends. The shaded portion measures 150 ft by 300 ft. Find the total perimeter of the track.



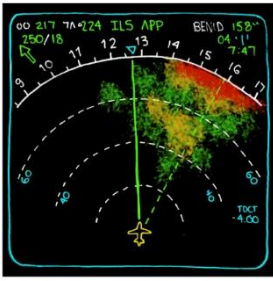
3. The parks department is constructing a skateboarding half-pipe ramp formed by two quarter circle ramps, each of which is 10 feet high, plus a flat space 20 feet long between the centers. Find the distance a skater travels from the top of one ramp to the top of the other.



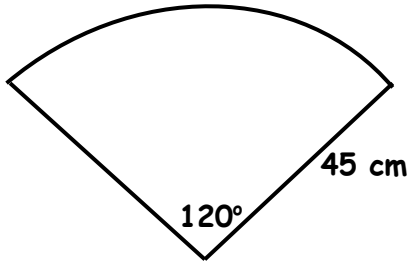
4. A lawn sprinkler located at the corner of a yard is set to rotate through 90° and project water out 30 feet. What area of the lawn is watered by the sprinkler?



5. An aircraft weather radar scans a 60° sector with a radius of 76 miles. How much of the sky can the pilot see when he looks at the radar?



6. A windshield wiper is 45 cm long. In one sweep, it turns through an angle of 120° . Calculate the area it covers in one sweep.

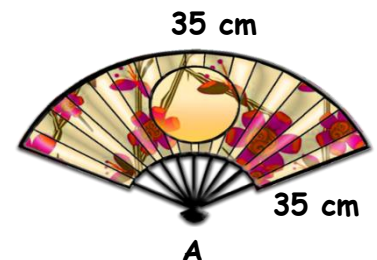


B-Level

7. A windshield wiper wiper through angle of 120° and clears an area of 368 square inches. How long is the windshield wiper?

8. A circular pool with a diameter of 20 meters has circular walkway around it with a width of two meters. Wood chips are going to be purchased to spread out on the path. A bag of wood chips can cover 5 square meters. How many bags should be purchased to have enough to cover the walkway?

9. A fan is in the shape of an arc of a circle with radius 35 cm. If the arc length is 35 cm, find the measure of angle A.



NOTE: You have just found the approximate number of degrees corresponding to 1 RADIAN, the angle created when the arc length = radius. You will learn much more about radians in Advanced Algebra.