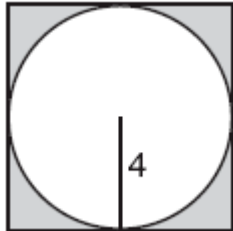


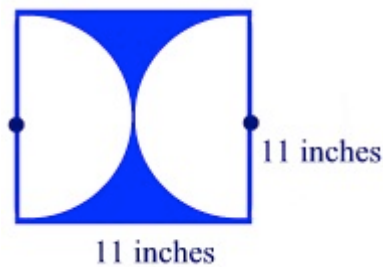
Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

### Shaded Area involving Circles

1) In the accompanying diagram, a circle with radius 4 is inscribed in a square. Find the area of the shaded region. Leave answer in terms of Pi.

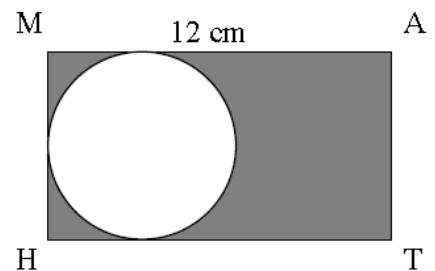


2) Find the number of square inches in the area of the shaded region of this square which is being intersected by two semicircles. Leave answer in terms of  $\pi$ .



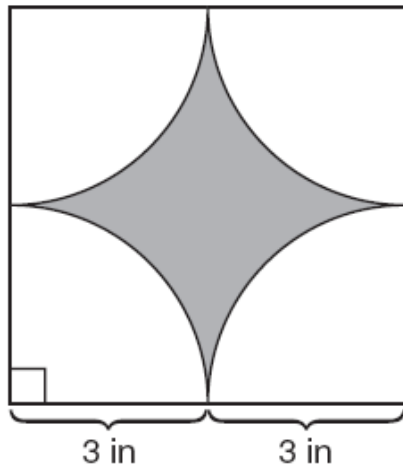
3) In the following diagram MATH is a rectangle with an inscribed circle. The circle has a diameter of 8 centimeters and the rectangle has a height of 12 centimeters (as shown).

(a) Find the exact area of the shaded region.

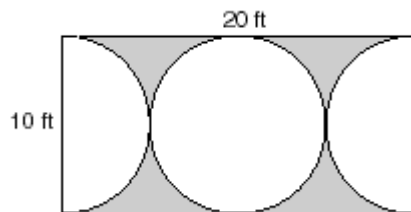


(b) Find the area of the shaded region to the nearest tenth.

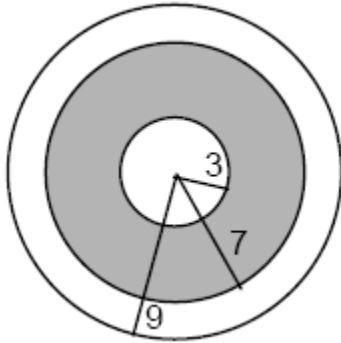
- 4) Ms. Barker created the logo shown below. The logo consists of a square and four quarter-circles of equal size. Find the area of the shaded region. Round your answer to the nearest square inch.



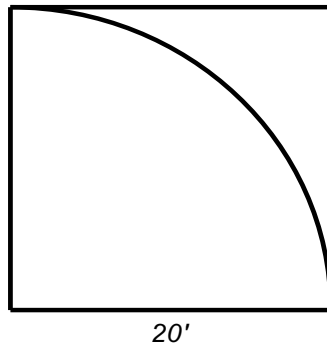
- 5) Mr. Locke has a rectangular plot of land with length = 20 feet and width = 10 feet. He wants to design a flower garden in the shape of a circle with two semicircles at each end of the center circle, as shown in the accompanying diagram. He will fill in the shaded area with wood chips. If one bag of wood chips covers 5 square feet, how many bags must he buy?



- 6) A target shown in the accompanying diagram consists of three circles with the same center. The radii of the circles have lengths of 3 inches, 7 inches, and 9 inches. What is the area of the shaded region to the nearest tenth of a square inch?



- 7) Mrs. Opthof plans to carpet part of her living room floor. The living room floor is a square 20 feet by 20 feet. She wants to carpet a quarter-circle as shown below.



Find, to the nearest square foot, what part of the floor will remain uncarpeted. Show how you arrived at your answer.