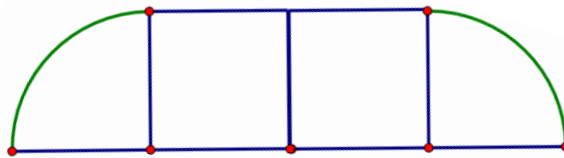
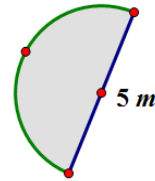
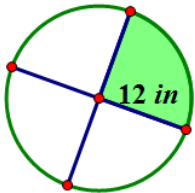


## Problem Set

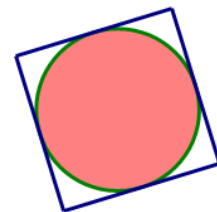
- Mark created a flower bed that is semicircular in shape, as shown in the image. The diameter of the flower bed is 5 m.
  - What is the perimeter of the flower bed? (Approximate  $\pi$  to be 3.14.)
  - What is the area of the flower bed? (Approximate  $\pi$  to be 3.14.)
- A landscape designer wants to include a semicircular patio at the end of a square sandbox. She knows that the area of the semicircular patio is  $25.12 \text{ cm}^2$ .
  - Draw a picture to represent this situation.
  - What is the length of the side of the square?
- A window manufacturer designed a set of windows for the top of a two-story wall. If the window is comprised of 2 squares and 2 quarter circles on each end, and if the length of the span of windows across the bottom is 12 feet, approximately how much glass will be needed to complete the set of windows?



- Find the area of the shaded region. (Approximate  $\pi$  to be  $\frac{22}{7}$ .)

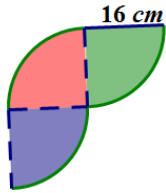


- The figure below shows a circle inside of a square. If the radius of the circle is 8 cm, find the following and explain your solution.
  - The circumference of the circle
  - The area of the circle
  - The area of the square

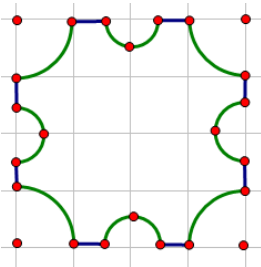




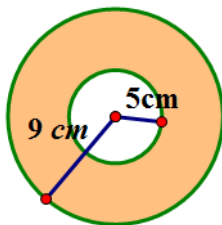
6. Michael wants to create a tile pattern out of three quarter circles for his kitchen backsplash. He will repeat the three quarter circles throughout the pattern. Find the area of the tile pattern that Michael will use. Approximate  $\pi$  as 3.14.



7. A machine shop has a square metal plate with sides that measure 4 cm each. A machinist must cut four semicircles, with a radius of  $\frac{1}{2}$  cm and four quarter circles with a radius of 1 cm from its sides and corners. What is the area of the plate formed? Use  $\frac{22}{7}$  to approximate  $\pi$ .



8. A graphic artist is designing a company logo with two concentric circles (two circles that share the same center but have different radii). The artist needs to know the area of the shaded band between the two concentric circles. Explain to the artist how he would go about finding the area of the shaded region.



9. Create your own shape made up of rectangles, squares, circles, or semicircles, and determine the area and perimeter.