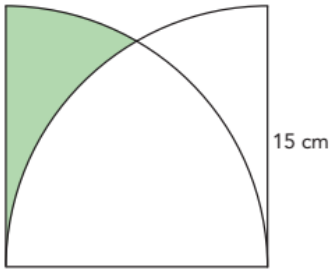
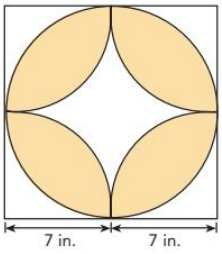
Circumference and Area of Circle

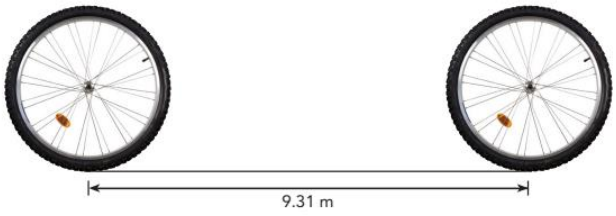
1 The figure shows two identical overlapping quadrants. Find the distance around the shaded part. Use 3.14 as an approximation for π. Round your answer to the nearest tenth of a centimeter.



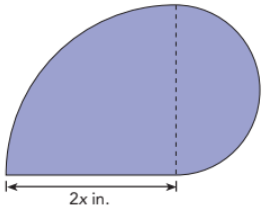
2 A cushion cover design is created from a circle of radius 7 inches, and 4 quadrants. Find the total area of the shaded parts of the design. Use $\frac{22}{7}$ as an approximation for π.



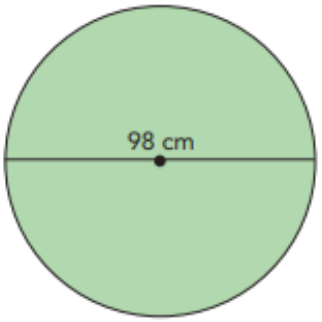
3 Two identical wheels are placed along a straight path so that their centers are 9.31 meters apart. The radius of each wheel is 3.5 centimeters. They are pushed towards each other at the same time, each making one revolution per second. How long does it take for them to knock into each other? Use $\frac{22}{7}$ as an approximation for π.



4 A stage prop is made up of a semicircle and a quadrant. Its area is 924 square inches. Find the value of x. Use $\frac{22}{7}$ as an approximation for π.



1



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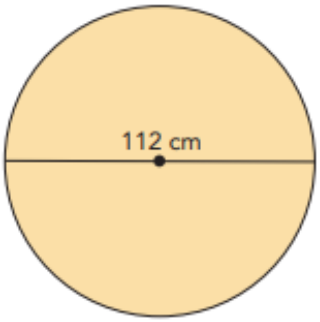
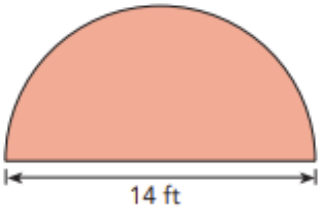


Find the distance around each semicircle. Use $\frac{22}{7}$ as an approximation for π.

3



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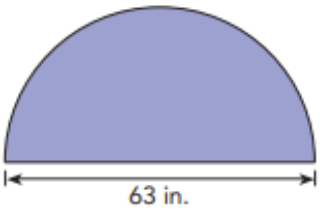

Find the distance around each quadrant. Round your answer to the nearest tenth. Use 3.14 as an approximation for π.

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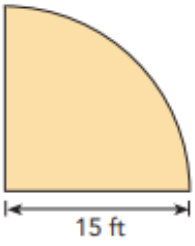


Solve. Show your work.

7 The diameter of a flying disc is 10 inches. Find the circumference and area of the disc. Use 3.14 as an approximation for π.

8 The area of a compact disc is $452\frac{4}{7}$ square centimeters. What is the diameter of the compact disc? Use $\frac{22}{7}$ as an approximation for π.

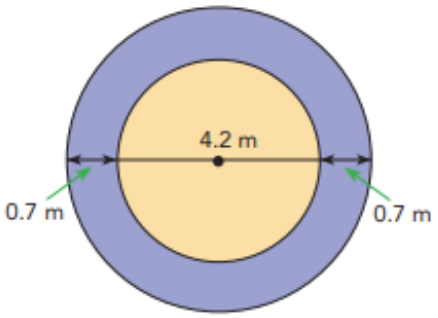
9 The circumference of a circular table is 816.4 centimeters. Find the radius of the table. Use 3.14 as an approximation for π.

10 A water fountain shoots up a jet of water. The water falls back down onto the ground in the shape of a circle. Michelle wants the circle of water on the ground to be 0.7 meter wider on each side. She gradually increases the strength of the water jet. The area of the circle of water increases at 0.2 square meter per second. Use $\frac{22}{7}$ as an approximation for π.

a) Find the area of the original circle of water.

b) Find the area of the larger circle of water.

c) How long does it take for the original circle of water to become the larger circle of water? Round your answer to the nearest second.

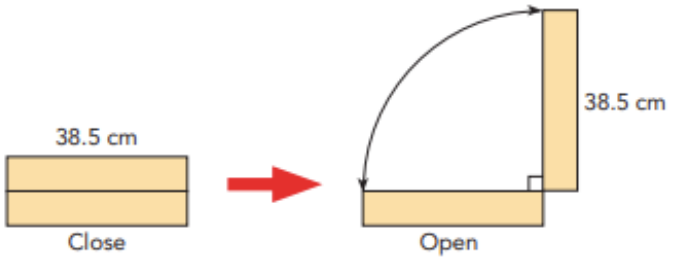


11 A machine in an assembly line stamps pieces of metal. The stamping plate on the machine travels in a path shaped like the arc of a quadrant as the stamping plate opens and closes. It takes the machine 5 seconds to open and close the stamping plate one time. Use $\frac{22}{7}$ as an approximation for π.

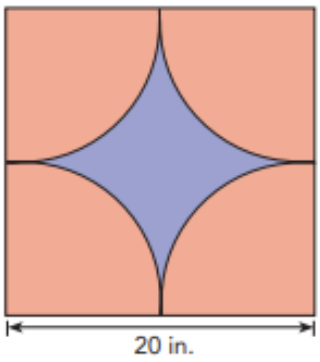
a) Find the total distance the outside edge of the stamping plate travels when the machine opens and closes one time.

b) Find the speed of the stamping plate's outside edge in centimeters per second.

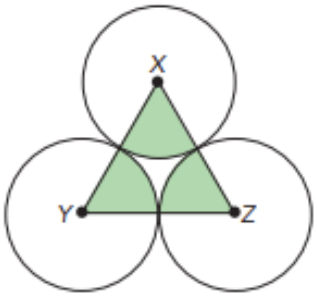
c) Assume the machine starts and ends in an open position. How many seconds will it take the machine to stamp 500 pieces of metal?



12 The figure shows four identical quadrants enclosed in a square. The side length of the square is 20 inches. Find the area of the blue part. Use 3.14 as an approximation for π.



13 The figure shows 3 identical circles. *X*, *Y*, and *Z* are the centers of the circles, and the radius of each circle is 15 feet. $\frac{1}{6}$ of each circle is shaded. What is the total area of the shaded portion? Round your answer to the nearest tenth of a foot. Use 3.14 as an approximation for π.



14 The figure is made up of one semicircle and two quadrants. The distance around the figure is 97.29 inches. Find the value of *k*. Use 3.14 as an approximation for π.