

Grade 7 · Circumference and Area of Circles · Test

Common Core 7.G.B.4 · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

This test checks circumference and area of circles, including semicircles and shapes made from circles. Each problem states whether to use 3.14 for π or to leave the answer in terms of π . Show your work, label units, and expect to finish in about 45 minutes. The test is worth 20 points.

Test information

- **Grade:** Grade 7
- **Chapter:** Circumference and Area of Circles
- **Common Core:** 7.G.B.4
- **Time:** 45 minutes
- **Total:** 20 points (Question 1: 2 pts; Question 2: 2 pts; Question 3: 2 pts; Question 4: 3 pts; Question 5: 2 pts; Question 6: 3 pts; Question 7: 3 pts; Question 8: 3 pts)

Question 1: Radius, diameter, and pi (2 points)

Circle with radius 9 cm is shown.

- Find the diameter. (1 point)
- Find the circumference in terms of π . (1 point)

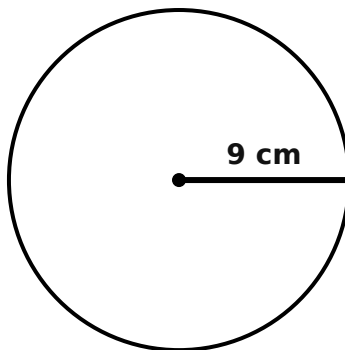


Figure for Question 1.

Question 2: Circumference of a round table (2 points)

A round table has a diameter of 15 ft. Calculate its circumference. Use 3.14 for π .

Question 3: Area of a circle (2 points)

Find the area of the circle. Use 3.14 for π .

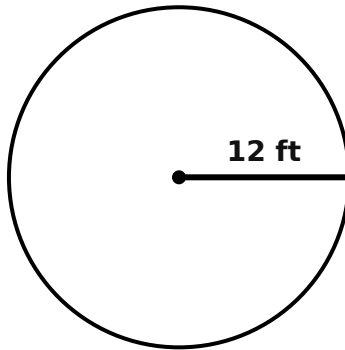


Figure for Question 3.

Question 4: From circumference to area (3 points)

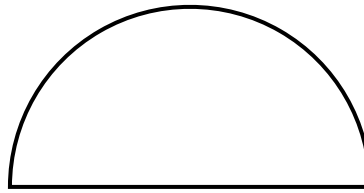
The circumference of a circle is 37.68 in. Find its radius, then find its area. Use 3.14 for π .

Question 5: Why the area formula works (2 points)

A circle with radius r is cut into many equal sectors that are rearranged into a shape close to a parallelogram. Write the base and the height of that shape in terms of π and r . Then show how this gives the area of the circle.

Question 6: Semicircle (3 points)

Find the area and the perimeter of the semicircle. Use 3.14 for π .



diameter 10 ft

Figure for Question 6.

Question 7: Comparing pizzas (3 points)

A small pizza has a diameter of 12 in. A large pizza has a diameter of 16 in. How many more square inches of pizza does the large one have? Use 3.14 for π .

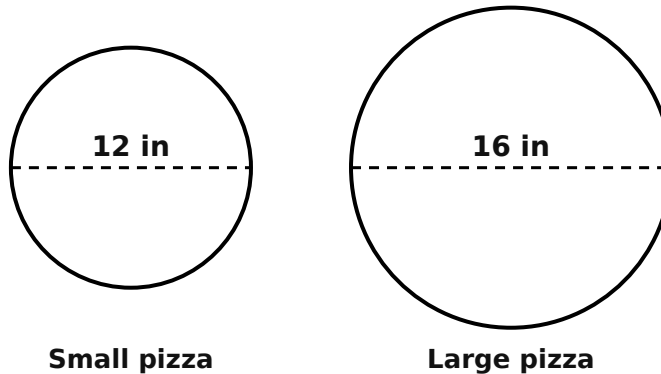


Figure for Question 7.

Question 8: Running track (3 points)

A field is a rectangle 30 m by 20 m with a semicircle on each of the two 20 m ends. (a) Find the distance around the field. (b) Find the area of the field. Use 3.14 for π .

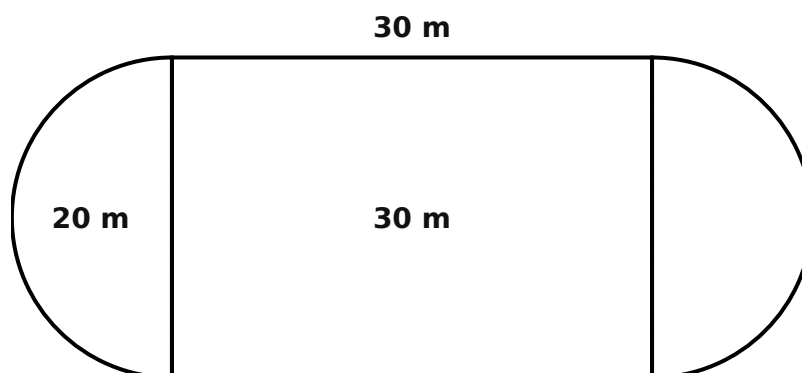


Figure for Question 8.