ALBERT

Name _____ Date _____

Area and Circumference of Circles Worksheet

Grade 7 · Common Core 7.G.B.4

> Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle.

Practice

Builds the skill step by step.

1. Find the circumference of a circle with a diameter of 10 cm. Use 3.14 for π.

2. Find the circumference of a circle with a radius of 6 in. Use 3.14 for π.

3. Find the area of a circle with a radius of 5 m. Use 3.14 for π.

4. A circle has a diameter of 14 ft. What is its radius?

   A. 7 ft

   B. 28 ft

   C. 14 ft

   D. 3.5 ft

5. Find the area of a circle with a diameter of 8 cm. Use 3.14 for π.

6. A circle has a radius of 7 in. Find its circumference. Use $\frac{22}{7}$ for π.

7. Which formula gives the area of a circle?

   A. $A = 2\pi r$

   B. $A = \pi d$

   C. $A = 2r$

   D. $A = \pi r^2$

8. A bike wheel has a diameter of 26 inches. How far does it roll in one full turn? Use 3.14 for π.

9. Find the area of a circle with a radius of 10 ft. Use 3.14 for π.

10. A circle has a circumference of 18.84 cm. What is its diameter? Use 3.14 for π.

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On Level

Grade-level practice.

1. A circular garden has a radius of 3.5 m. What is its area? Use 3.14 for π and round to the nearest tenth.

2. A circle has a circumference of 31.4 in. What is its area? Use 3.14 for π.

3. A small pizza has a 12-inch diameter. A large pizza has a 16-inch diameter. How much more area does the large pizza have? Use 3.14 for π.

4. If the radius of a circle doubles, what happens to its circumference?

   A. It stays the same.

   B. It is multiplied by 4.

   C. It is cut in half.

   D. It doubles.

5. A semicircle has a diameter of 20 cm. What is its area? Use 3.14 for π.

6. A circular pond has a diameter of 40 ft. How much fencing is needed to go around it? Use 3.14 for π.

7. A circle has an area of 153.86 cm^2. What is its radius? Use 3.14 for π.

8. A circle has a diameter of 9 m. Which is closest to its circumference?

   A. 14 m

   B. 28 m

   C. 64 m

   D. 81 m

9. The minute hand of a clock is 5 inches long. How far does its tip travel in one hour? Use 3.14 for π.

10. A circular rug has a radius of 2.5 m. What is its area? Use 3.14 for π and round to the nearest tenth.

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Challenge

Multi-step and word problems that stretch it.

1. A circle fits exactly inside a square with 10 cm sides. What is the area inside the square but outside the circle? Use 3.14 for π.

2. A wheel with a 24-inch diameter makes 100 full turns. How many feet does it travel? Use 3.14 for π.

3. A circle has a circumference of 50.24 m. What is its area? Use 3.14 for π.

4. Kaya says a circle with radius 4 has an area of $2 \times 3.14 \times 4 = 25.12$. What mistake did she make?

   A. She used the circumference formula instead of the area formula.

   B. She used the diameter instead of the radius.

   C. She should have multiplied by 4 instead of 2.

   D. She made no mistake.

5. A round table has a diameter of 1.2 m. A tablecloth hangs 0.2 m over the edge all the way around. What is the area of the tablecloth? Use 3.14 for π.

6. A track is a rectangle 100 m long with a semicircle on each end. Each semicircle has a diameter of 60 m. What is the distance around the track? Use 3.14 for π.

7. Circle A has a radius of 3 cm. Circle B has a radius of 6 cm. How do their areas compare?

   A. B's area is 2 times A's.

   B. B's area is 3 times A's.

   C. B's area is 4 times A's.

   D. Their areas are equal.

8. A quarter circle has a radius of 8 in. What is its perimeter, the curved edge plus the two straight edges? Use 3.14 for π.

9. One sprinkler waters a circle with a radius of 15 ft. A new sprinkler waters a circle with a radius of 20 ft. How many more square feet does the new one water? Use 3.14 for π.

10. A circle and a square each have a perimeter of 62.8 cm. Which has the greater area, and by how much? Use 3.14 for π.