NAME:_____

1. The radius of a circle is 5 inches. Find the area of the circle.

2. What is the area of a circle whose diameter is 14 centimeters?

   [A] 196π cm^2 [B] 28π cm^2

   [C] 14π cm^2 [D] 49π cm^2

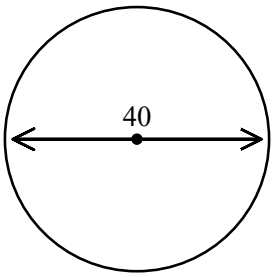
3. Find the area of a circle with diameter of 54 decimeters. (Use 3.14 for π.)

   [A] 2289.06 dm^2 [B] 9156.24 dm^2

   [C] 169.56 dm^2 [D] 7187.6484 dm^2

4. The diameter of a circle is 6 feet.
   (a) What is the circumference of the circle?
   (b) What is the area of the circle?

5. Find the area and circumference of the circle in terms of π.



6. If the area of a circle is known, the radius can be found by the formula: $r = \sqrt{\frac{A}{\pi}}$. Find the radius of a circle if its area is 24. Round your answer to the nearest tenth.

   [A] 0.1 [B] 0.4 [C] 2.8 [D] 7.6

7. Find the radius of a circle with an area of 125 in^2. Use the formula $A = \pi r^2$, where A is the area and r is the radius. Round your answer to the nearest tenth.

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8. Use any problem solving strategy to solve the following problem. The radius r of a circle is given by the formula $r = \sqrt{\frac{A}{\pi}}$ where A is the area of the circle. The area of a circle is less than 200 m^2 and has a radius that is a whole number. If the area is calculated using 3.14 for π, what are the possible areas of the circle?

9. The circumference of a circle is 16π centimeters.
   (a) Find the diameter of the circle.
   (b) Find the area of the circle.

10. The circumference of a circle is 8π inches.
    (a) Find the radius of the circle.
    (b) Find the area of the circle.

11. Georgio promises to serve a square yard of pizza in his super gigantic pizza special. If all his pans are round, what is the diameter of the pan he will have to use?

12. A circular 12-in. dartboard has a green center that is 3 in. in diameter. The rest of the dartboard is black. Write an explanation of how to determine the probability of landing a dart in the black part of the dartboard if you throw a dart randomly and hit the board.

13. A manufacturer of containers for chow mein noodles wants to make a cylindrical container with paper sides and aluminum ends. If the ends of the container are circles with diameter 10 mm, how many square millimeters of aluminum will the manufacturer need per container?

14. The formula for the area of a circle is πr^2 and the formula for the circumference of a circle is $2\pi r$, where r is the radius of the circle. Write and simplify the ratio $\frac{\text{area of a circle}}{\text{circumference of a circle}}$.

15. Prove that you can find the area of a circle by squaring the diameter, multiplying by π, and dividing by 4.

[1] 78.5 in.^2

[2] D

[3] A

[4] (a) 18.84 feet
(b) 28.26 square feet

[5] Area: 400π, Circumference: 40π

[6] C

[7] 6.3 in.

[8] 3.14 m^2, 12.56 m^2, 28.26 m^2, 50.24 m^2, 78.5 m^2, 113.04 m^2, 153.86 m^2

[9] (a) 16 centimeters
(b) 200.96 square centimeters

[10] (a) 4 inches
(b) 50.24 square inches

[11] at least 20.3 in.

[12] Find the ratio of the area of the small circle, 2.25π, to that of the dartboard, 36π. Then subtract this ratio from 1 to get the probability of hitting the black part $\left(\frac{15}{16}\right)$.

[13] 157 mm^2

[14] $\frac{r}{2}$

[15] $A = \pi r^2 = \pi\left(\frac{2r}{2}\right)\left(\frac{2r}{2}\right) = \pi\left(\frac{d}{2}\right)\left(\frac{d}{2}\right) = \frac{\pi d^2}{4}$