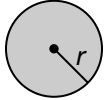


Name _____ Date _____

Area of Circles (pages 406–409)

If you cut a circle into a number of equal-sized pie-shaped pieces and arrange them carefully, you can form a rough parallelogram. The height of the parallelogram is about equal to the radius of the circle. The base is about equal to $\frac{1}{2}$ of the circumference of the circle. This would mean that the area is about $\frac{1}{2}Cr$. Substitute the circumference formula for C and you get the following equation.

Finding the Area of a Circle	The area (A) of a circle equals the product of π and the square of the radius (r). $A = \pi r^2$	
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EXAMPLES

A Find the area of a circle with a radius of 7 cm. Use 3.14 for π .

$A = \pi r^2$ Write the formula.
 $A \approx 3.14(7)^2$ Substitute the values you know.
 $A \approx 154 \text{ cm}^2$ Use a calculator and round.

B Find the area of a circle that has a diameter of 5 inches. Use 3.14 for π .

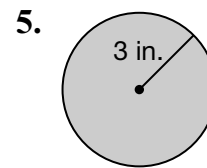
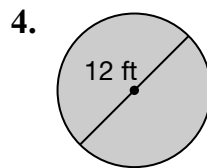
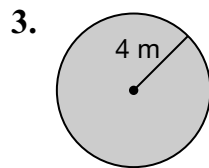
$A = \pi r^2$ Write the formula.
 $A \approx 3.14(2.5)^2$ $r = \frac{1}{2}d$ or 2.5 in.
 $A \approx 19.6 \text{ in}^2$ Use a calculator and round.

Try These Together

- A circle has a radius of 2 in. What is its area? Use 3.14 for π .
HINT: Write the formula and substitute.
- The diameter of a circle is 4.2 yd. Find its area. Use 3.14 for π .
HINT: First find the radius.

PRACTICE

Find the area of each circle to the nearest tenth. Use 3.14 for π .



6. diameter, 18 centimeters 7. radius, 5 meters 8. radius, 10 inches



9. **Standardized Test Practice** What is the area of a circle that has a diameter of 30 centimeters?

- A** 353.3 square centimeters **B** 2,826 square centimeters
C 176.6 square centimeters **D** 706.5 square centimeters

Answers: 1. about 12.6 in² 2. about 13.8 yd² 3. 50.2 m² 4. 113.0 ft² 5. 28.3 in² 6. 254.3 cm² 7. 78.5 m² 8. 314.0 in² 9. D