

# Circles: Circumference and Area

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Score: \_\_\_\_\_ / 18

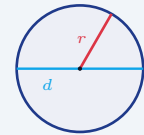
## Quick Review and Helpful Hints

For a circle with radius  $r$  (and diameter  $d = 2r$ ): the *circumference* (distance around) is  $C = 2\pi r = \pi d$ , and the *area* (space inside) is  $A = \pi r^2$ . Use  $\pi \approx 3.14$ . Remember the area uses the radius *squared*.

▶ **Example:** Find the area of a circle with radius 4 (use  $\pi \approx 3.14$ ).

**Work:** Area is  $\pi r^2$ . Square the radius first:  $4^2 = 16$ . Then multiply:  $3.14 \times 16$ .

★ **Answer:** 50.24



$$C = 2\pi r = \pi d;$$

$$A = \pi r^2.$$

### Practice Problems

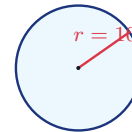
Use  $\pi \approx 3.14$ . Use each circle diagram to find the circumference ( $C$ ) or area ( $A$ ) as directed.

1. Find  $C$ .



\_\_\_\_\_

6. Find  $A$ .



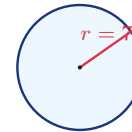
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2. Find  $C$ .



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7. Find  $C$ .



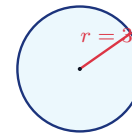
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3. Find  $A$ .



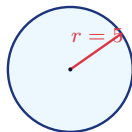
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8. Find  $A$ .



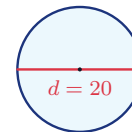
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4. Find  $A$ .



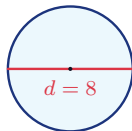
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9. Find  $C$ .



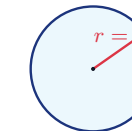
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5. Find  $C$ .

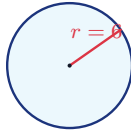


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10. Find  $A$ .

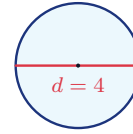


11. Find  $C$ .



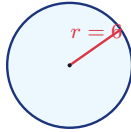
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13. Find  $C$ .



\_\_\_\_\_

12. Find  $A$ .



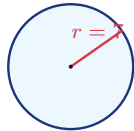
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14. Find  $A$ .



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◆ Word Problems

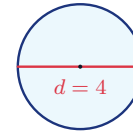


15. A circular garden has radius 7 m. What is the distance around it?

Use  $C = 2\pi r$ ,  $\pi \approx 3.14$

Work: \_\_\_\_\_

\_\_\_\_\_

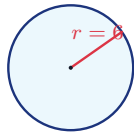


17. A round table has diameter 4 feet. What is the distance around its edge?

Use  $C = \pi d$ ,  $\pi \approx 3.14$

Work: \_\_\_\_\_

\_\_\_\_\_

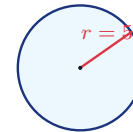


16. A pizza has radius 6 inches. What is its area?

Use  $A = \pi r^2$ ,  $\pi \approx 3.14$

Work: \_\_\_\_\_

\_\_\_\_\_



18. A circular pool has radius 5 feet. What is the area of a cover for it?

Use  $A = \pi r^2$ ,  $\pi \approx 3.14$

Work: \_\_\_\_\_

\_\_\_\_\_



## Answer Keys

- |          |            |                            |
|----------|------------|----------------------------|
| 1. 18.84 | 7. 43.96   | 13. 12.56                  |
| 2. 62.8  | 8. 28.26   | 14. 200.96                 |
| 3. 12.56 | 9. 62.8    | 15. 43.96 m                |
| 4. 78.5  | 10. 3.14   | 16. 113.04 in <sup>2</sup> |
| 5. 25.12 | 11. 37.68  | 17. 12.56 ft               |
| 6. 314   | 12. 113.04 | 18. 78.5 ft <sup>2</sup>   |

### Step-by-Step Explanations

**1.** Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Circumference is  $2\pi r$ . With  $\pi \approx 3.14$ :  $2 \times 3.14 \times 3 = 18.84$ . So the final answer is 18.84.

**2.** A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is  $C = 2\pi r = 2 \times 3.14 \times 10 = 62.8$ . So the final answer is 62.8.

**3.** Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Area is  $\pi r^2$ . Square the radius first:  $2^2 = 4$ , then  $3.14 \times 4 = 12.56$ . So the final answer is 12.56.

**4.** Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is  $A = \pi r^2 = 3.14 \times 5^2 = 3.14 \times 25 = 78.5$ . So the final answer is 78.5.

**5.** Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is With the diameter given, use  $C = \pi d = 3.14 \times 8 = 25.12$ . So the final answer is 25.12.

**6.** A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is  $A = 3.14 \times 10^2 = 3.14 \times 100 = 314$ . So the final answer is 314.

**7.** Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is  $C = 2\pi r = 2 \times 3.14 \times 7 = 43.96$ . So the final answer is 43.96.

**8.** Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is  $A = 3.14 \times 3^2 = 3.14 \times 9 = 28.26$ . So the final answer is 28.26.

**9.** Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is  $C = \pi d = 3.14 \times 20 = 62.8$ . So the final answer is 62.8.

**10.** A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is  $A = 3.14 \times 1^2 = 3.14$ . So the final answer is 3.14.

**11.** Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is  $C = 2\pi r = 2 \times 3.14 \times 6 = 37.68$ . So the final answer is 37.68.

**12.** Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is  $A = 3.14 \times 6^2 = 3.14 \times 36 = 113.04$ . So the final answer is 113.04.

**13.** Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is  $C = \pi d = 3.14 \times 4 = 12.56$ . So the final answer is 12.56.

**14.** A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is  $A = 3.14 \times 8^2 = 3.14 \times 64 = 200.96$ . So the final answer is 200.96.

**15.** Step by step: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Distance around is the circumference:  $C = 2\pi r = 2 \times 3.14 \times 7 = 43.96$  m. So the final answer is 43.96 m.

**16.** Take it one move at a time: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Area is  $\pi r^2 = 3.14 \times 6^2 = 3.14 \times 36 = 113.04$  in<sup>2</sup>. So the final answer is 113.04 in<sup>2</sup>.

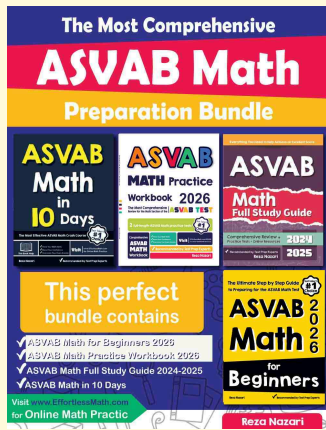
**17.** Start by naming the process: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Distance around uses the diameter:  $C = \pi d = 3.14 \times 4 = 12.56$  ft. So the final answer is 12.56 ft.

**18.** A good way to think about this is: Read what the problem is asking, choose the matching rule, write the setup, and then simplify one step at a time. The setup/work is Cover area is  $\pi r^2 = 3.14 \times 5^2 = 3.14 \times 25 = 78.5$  ft<sup>2</sup>. So the final answer is 78.5 ft<sup>2</sup>.



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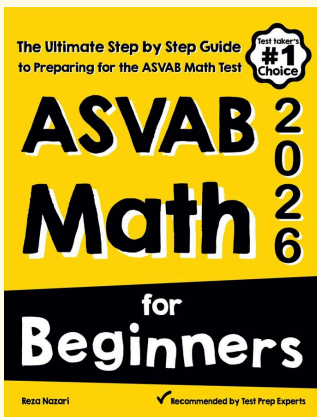
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