

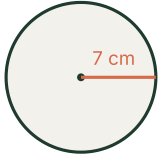
Circumference & Area of *Circles*

Answer key

7.G.B.4

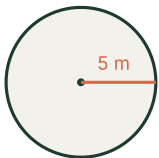
14 problems

1. Find the circumference of the circle.

**Answer** 14π cm

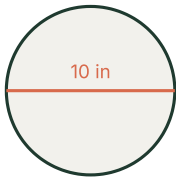
$$C = 2\pi r = 2\pi(7) = 14\pi \text{ cm.}$$

2. Find the area of the circle.

**Answer** 25π square m

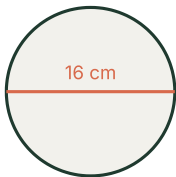
$$A = \pi r^2 = \pi(5)^2 = 25\pi \text{ square m.}$$

3. Find the circumference of the circle.

**Answer** 10π in

The diameter is given: $C = \pi d = \pi(10) = 10\pi$ in.

4. Find the area of the circle.

**Answer** 64π square cm

The diameter is 16 cm, so the radius is 8 cm: $A = \pi r^2 = \pi(8)^2 = 64\pi$ square cm.

5. A circle has a radius of 3 ft. Find its circumference and its area.

Answer $C = 6\pi$ ft; $A = 9\pi$ square ft

$$C = 2\pi r = 2\pi(3) = 6\pi \text{ ft. } A = \pi r^2 = \pi(3)^2 = 9\pi \text{ square ft.}$$

6. A circle has a diameter of 9 cm. Find its area.

Answer $\frac{81}{4}\pi$ square cm

$$\text{The radius is } \frac{9}{2} \text{ cm: } A = \pi r^2 = \pi \left(\frac{9}{2}\right)^2 = \frac{81}{4}\pi \text{ square cm.}$$

7. The circumference of a circle is 12π in. Find its radius.

Answer 6 in

$$C = 2\pi r, \text{ so } 12\pi = 2\pi r. \text{ Divide by } 2\pi: r = 6 \text{ in.}$$

8. The area of a circle is 36π square m. Find its radius.

Answer 6 m

$$A = \pi r^2, \text{ so } 36\pi = \pi r^2, \text{ giving } r^2 = 36 \text{ and } r = 6 \text{ m.}$$

9. Which expression gives the area of a circle with radius r ?

Answer C) πr^2

The area of a circle is $A = \pi r^2$; the others give circumference or are incomplete.

10. Find the area of the semicircle (half of a circle).



Answer 18π square cm

$$\text{A full circle has area } \pi(6)^2 = 36\pi. \text{ The semicircle is half: } \frac{1}{2}(36\pi) = 18\pi \text{ square cm.}$$

11. A circular garden has a radius of 10 m. A path runs all the way around its edge. What is the length of the path (the circumference)?

Answer 20π m

$$C = 2\pi r = 2\pi(10) = 20\pi \text{ m.}$$

12. A pizza has a diameter of 14 in. Find the area of the top of the pizza.

Answer 49π square in

$$\text{The radius is 7 in: } A = \pi r^2 = \pi(7)^2 = 49\pi \text{ square in.}$$

13. A circular tabletop has an area of 100π square cm. A circular placemat with radius 4 cm is set on it. How much of the tabletop area is left uncovered? Leave your answer in terms of π .

Answer 84π square cm

$$\text{Tabletop area is } 100\pi. \text{ Placemat area} = \pi(4)^2 = 16\pi. \text{ Uncovered} = 100\pi - 16\pi = 84\pi \text{ square cm.}$$

14. A bike wheel has a radius of 13 in. Find the distance the bike travels in one full turn of the wheel (the circumference), then write the distance for 5 full turns. Leave both answers in terms of π .

Answer One turn: 26π in; five turns: 130π in

$$C = 2\pi r = 2\pi(13) = 26\pi \text{ in for one turn. Five turns: } 5 \times 26\pi = 130\pi \text{ in.}$$