

# Area of Circles, Sectors and Compound Shapes

Year 8 · Geometry · y8-geo-area-rect

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Class: \_\_\_\_\_

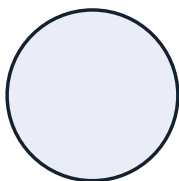
Score: \_\_\_\_ / \_\_\_\_

## Instructions

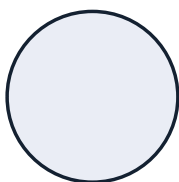
Answer every question in Practice. Try the Challenge section once Practice is complete. 10 questions in total.

## Practice

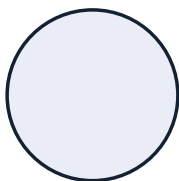
1. A circle has a radius of 5 cm. Using  $\pi \sim 3.14$ , find its area to 1 decimal place.



2. A circle has a diameter of 8 cm. Using  $\pi \sim 3.14$ , find its area to 1 decimal place.



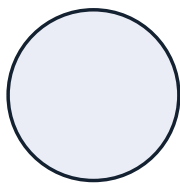
3. A circle has a radius of 10 cm. Using  $\pi \sim 3.14$ , find its area.



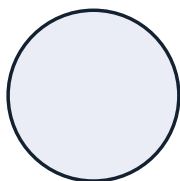
4. A semicircle has a radius of 6 cm. Using  $\pi \sim 3.14$ , find its area to 1 decimal place.

5. A quarter circle has a radius of 8 cm. Using  $\pi \sim 3.14$ , find its area.

6. The area formula uses the radius, not the diameter:  $A = \pi \times r^2$ . A circle has a diameter of 14 cm. Using  $\pi \sim 3.14$ , find its area.



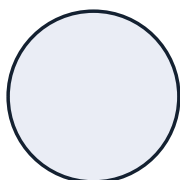
7. In  $A = \pi \times r^2$ , the radius must be squared (multiplied by itself), not just multiplied by  $\pi$ . A circle has a radius of 9 cm. Using  $\pi \sim 3.14$ , find its area.



8. A sector's area is a fraction of the full circle's area — for a quarter, use  $\frac{1}{4}$ . A circle has a radius of 10 cm. Using  $\pi \sim 3.14$ , find the area of a quarter sector.

### Challenge

1. A circle has an area of  $78.5 \text{ cm}^2$ . Using  $\pi \sim 3.14$ , find its radius.



2. A running track infield is a rectangle 80 m by 40 m with a semicircle of diameter 40 m attached to each short end (the two semicircles together form one full circle of radius 20 m). Using  $\pi \sim 3.14$ , find the total infield area.