

Grade 7 • Unit 3 Worksheet

Measuring Circles

Name: _____

Date: _____

Part A • Warm-up: Parts of a Circle

1. Define each term in your own words and give an example with a circle of radius 5 cm.

a. Radius:

b. Diameter:

c. Circumference:

d. For a circle of radius 5 cm: diameter = _____ cm, circumference $\approx$ _____ cm (use $\pi \approx 3.14$)

Part B • Circumference

2. Use $\pi \approx 3.14$ unless told to express your answer in terms of π .

Radius	Diameter
3 cm	?
?	10 in
?	?
7 m	?

For the last row, give your answer as _____ π m.

3. A pizza has a circumference of 50.24 inches.

Find the diameter. Show your work.

Diameter = _____ inches

Part C • Area of a Circle

4. A circular table has radius 4 ft. Find its area.
- Exact answer (in terms of π): _____ sq ft
 - Approximate (using $\pi \approx 3.14$): _____ sq ft
5. Two pizzas: a 10-inch pizza for \$9 and a 14-inch pizza for \$15. (Sizes are diameters.) Find the area of each pizza. Show your work.

Calculate the price per square inch for each pizza.

Which is the better deal? _____. Explain in one sentence.

Part D • Circumference vs Area (the Big Confusion)

6. For each situation, circle whether it involves CIRCUMFERENCE or AREA.
- Putting a fence around a circular garden: ☐ Circumference ☐ Area
 - Painting a circular pool deck: ☐ Circumference ☐ Area
 - Distance a bicycle wheel travels in one rotation: ☐ Circumference ☐ Area
 - Amount of frosting to cover a circular cake top: ☐ Circumference ☐ Area
 - Length of ribbon to wrap once around a circular plate: ☐ Circumference ☐ Area

How did you decide? What is the key question you ask yourself?

Part E • Compound Shapes

7. A track has two straight sections of 100 m each and two semicircular ends with radius 30 m. What is the total length around the track?

Show your work:

Total length = _____ m (use $\pi \approx 3.14$)

8. A square has side length 12 cm with a circle inscribed inside (so the circle's diameter equals the square's side). Find the area of the region INSIDE the square but OUTSIDE the circle.

Show your work:

Area outside circle = _____ sq cm (in terms of π is fine)

Part F • Error Analysis & Reasoning

9. Tyler computed the area of a circle with radius 6 like this: $A = \pi \times 6 \times 2 = 12\pi$.

Is Tyler correct? ☐ Yes ☐ No

What did Tyler confuse? Explain.

The correct area = _____ sq units (in terms of π)

10. Mai claims: "If you double the radius of a circle, you double the area." Test this.

Circle with radius 3: area = _____. Circle with radius 6: area = _____.

When the radius doubles, the area is multiplied by _____.

Is Mai correct? ☐ Yes ☐ No. Explain.
