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Area And Circumference Of A Circle Worksheet Answer Key PDF

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Part 1: Building a Foundation

What is the formula for the circumference of a circle in terms of its radius?

undefined. A) C = π r^2

undefined. B) C = 2π r ✓

undefined. C) C = π D

undefined. D) C = π / r

The correct formula for the circumference of a circle in terms of its radius is C = 2πr.

Which of the following statements are true about a circle? (Select all that apply)

undefined. A) The diameter is twice the radius. ✓

undefined. B) The circumference is the distance around the circle. ✓

undefined. C) The area is calculated as π D^2.

undefined. D) The radius is half the diameter. ✓

The true statements are that the diameter is twice the radius, the circumference is the distance around the circle, and the radius is half the diameter.

Explain in your own words what the term 'circumference' means in relation to a circle.

Circumference refers to the total distance around the circle.

List the formulas for calculating the circumference and area of a circle.

1. Circumference formula

C = 2πr

2. Area formula

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A = πr^2

The formulas are C = 2πr for circumference and A = πr^2 for area.

Part 2: Understanding and Application

If the diameter of a circle is 10 cm, what is its radius?

undefined. A) 5 cm ✓

undefined. B) 10 cm

undefined. C) 20 cm

undefined. D) 15 cm

The radius is half of the diameter, so the radius is 5 cm.

Given a circle with a radius of 4 cm, which of the following are correct calculations? (Select all that apply)

undefined. A) Circumference = 8π cm ✓

undefined. B) Area = 16π cm² ✓

undefined. C) Diameter = 8 cm ✓

undefined. D) Circumference = 16π cm

The correct calculations are Circumference = 8π cm, Area = 16π cm², and Diameter = 8 cm.

A circular track has a diameter of 200 meters. Calculate the distance a runner would cover after completing one lap around the track.

The distance covered is the circumference, which is 200π meters.

A circular garden has a radius of 7 meters. What is the approximate area of the garden?

undefined. A) 154 m² ✓

undefined. B) 44 m²

undefined. C) 98 m²

undefined. D) 28 m²

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The approximate area of the garden is 154 m².

Part 3: Analysis, Evaluation, and Creation

If the circumference of a circle is directly proportional to its diameter, what happens to the circumference if the diameter is tripled?

undefined. A) It remains the same.

undefined. B) It doubles.

undefined. C) It triples. ✓

undefined. D) It quadruples.

If the diameter is tripled, the circumference also triples.

Analyze the following scenarios and identify which are correct based on the relationship between radius, diameter, and circumference. (Select all that apply)

undefined. A) If the radius is 3 cm, the diameter is 6 cm. ✓

undefined. B) If the diameter is 12 cm, the circumference is 24π cm. ✓

undefined. C) If the circumference is 10π cm, the radius is 5 cm.

undefined. D) If the radius is 8 cm, the circumference is 16π cm. ✓

The correct statements are A, B, and D.

Compare and contrast the formulas for circumference and area of a circle. How do they relate to each other?

The circumference formula involves the radius multiplied by 2π, while the area formula involves the radius squared multiplied by π.

A circular pool has a radius of 10 meters. If the cost to tile the pool is $5 per square meter, what is the total cost to tile the entire pool area?

undefined. A) $1570 ✓

undefined. B) $3140

undefined. C) $500

undefined. D) $157

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The total cost to tile the pool area is $1570.

Evaluate the following statements and select those that correctly describe the impact of changing a circle's radius on its area and circumference. (Select all that apply)

undefined. A) Doubling the radius quadruples the area. ✓

undefined. B) Doubling the radius doubles the circumference.

undefined. C) Halving the radius halves the area.

undefined. D) Halving the radius quarters the circumference. ✓

The correct statements are A and D.

Design a real-world problem involving a circular object (e.g., a pizza, a round table) and create a question that requires calculating either the area or circumference. Provide a solution to your problem.

An example could be calculating the area of a pizza to determine how many slices can be made.

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