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Radius And Diameter Worksheet Questions and Answers PDF

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Part 1: Foundational Knowledge

What is the definition of the radius of a circle?

Hint: Think about the distance from the center to the edge of the circle.

○ **A) The distance from the center to any point on the circumference ✓**

○ B) The distance across the circle through its center

○ C) The area of the circle

○ D) The perimeter of the circle

❚ The radius is the distance from the center to any point on the circumference.

Which formula correctly represents the relationship between the radius and diameter?

Hint: Consider how the radius relates to the diameter mathematically.

○ A) Diameter = Radius ÷ 2

○ B) Radius = Diameter × 2

○ **C) Diameter = 2 × Radius ✓**

○ D) Radius = Diameter + 2

❚ The correct formula is Diameter = 2 × Radius.

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

Hint: Think about the properties of circles.

☐ **A) The diameter is twice the radius. ✓**

☐ **B) The radius is half the diameter. ✓**

☐ **C) The circumference is the distance around the circle. ✓**

☐ D) The center is not part of the circle.

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

Explain in your own words why the diameter is always twice the radius of a circle.

Hint: Consider the definitions of radius and diameter.

The diameter is the longest distance across the circle, which is made up of two radii.

Provide the terms for the following definitions:

Hint: Think about the basic terms used in circle geometry.

1. a) The distance from the center of a circle to any point on its circumference.

Radius

2. b) The distance across a circle through its center.

Diameter

The answers are radius for the first definition and diameter for the second.

Part 2: comprehension

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

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Hint: Use the relationship between diameter and radius.

○ **A) 5 cm** ✓
○ B) 10 cm
○ C) 15 cm
○ D) 20 cm

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

Which of the following are true if the radius of a circle is 4 cm? (Select all that apply)

Hint: Consider the implications of the radius on diameter and circumference.

☐ **A) The diameter is 8 cm.** ✓
☐ B) The diameter is 4 cm.
☐ C) The circumference is less than 8 cm.
☐ **D) The diameter is twice the radius.** ✓

| The true statements are that the diameter is 8 cm and the diameter is twice the radius.

Describe how you would explain the concept of a circle's radius and diameter to someone who has never studied geometry before.

Hint: Think about simple language and relatable examples.

| **You would explain that the radius is the distance from the center to the edge, while the diameter is the distance across the circle through the center.**

Part 3: Application and Analysis

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

Hint: Use the relationship between radius and diameter.

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○ A) 7 meters
○ **B) 14 meters** ✔
○ C) 21 meters
○ D) 28 meters

The diameter is 14 meters, as it is twice the radius.

If a bicycle wheel has a diameter of 24 inches, which of the following statements are true? (Select all that apply)

Hint: Consider the relationship between diameter and radius.

☐ **A) The radius is 12 inches.** ✔
☐ B) The radius is 24 inches.
☐ **C) The diameter is twice the radius.** ✔
☐ **D) The circumference can be calculated using the diameter.** ✔

The true statements are that the radius is 12 inches and the diameter is twice the radius.

A clock face has a diameter of 30 cm. Calculate the radius and explain the steps you took to find it.

Hint: Use the relationship between diameter and radius.

The radius is 15 cm, found by dividing the diameter by 2.

Which of the following best describes the relationship between the radius and diameter in terms of proportionality?

Hint: Think about how one measurement relates to the other.

○ **A) The radius is always half the diameter.** ✔
○ B) The diameter is always three times the radius.
○ C) The radius and diameter are unrelated.
○ D) The diameter is always half the radius.

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> The radius is always half the diameter.

Analyze the effect of doubling the radius of a circle on its diameter and circumference. Provide a detailed explanation.

Hint: Consider how changes in radius affect other measurements.

> **Doubling the radius will also double the diameter and increase the circumference proportionally.**

Part 4: Evaluation and Creation

If you know the diameter of a circle, which of the following methods would be the most efficient to find the radius?

Hint: Think about the mathematical operations involved.

◯ A) Multiply the diameter by 2
◯ **B) Divide the diameter by 2 ✓**
◯ C) Subtract 2 from the diameter
◯ D) Add 2 to the diameter

> The most efficient method is to divide the diameter by 2.

Which of the following scenarios correctly apply the concepts of radius and diameter? (Select all that apply)

Hint: Think about practical applications of these concepts.

☐ **A) Calculating the length of a circular track using its diameter. ✓**
☐ **B) Designing a round tablecloth by measuring the radius of the table. ✓**
☐ **C) Estimating the distance around a circular pond using its radius. ✓**
☐ D) Determining the height of a cylindrical can using its diameter.

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> The correct scenarios include calculating the length of a circular track, designing a round tablecloth, and estimating the distance around a circular pond.

Create a real-world problem involving a circle where you need to find either the radius or diameter. Provide the problem and the solution.

Hint: Think about everyday situations that involve circles.

> **An example problem could involve calculating the diameter of a pizza based on its radius, with a solution showing the calculation.**

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