Exploring Circles: Finding Area and Circumference

Student Name: _____

Class: _____

Due Date: _____

Introduction to Circles

What is a Circle?

A circle is a round shape where every point on the edge is equal distance from a fixed central point called the center. The radius of a circle is the distance from the center to the edge, and the diameter is twice the radius.

Practice Questions:

1. What is the definition of a circle?

2. What is the relationship between the radius and diameter of a circle?

Formulas for Area and Circumference

Formulas:

The formula for the area of a circle is: A = πr^2

The formula for the circumference of a circle is: C = 2πr

Practice Questions:

1. What is the formula for the area of a circle?

2. What is the formula for the circumference of a circle?

Real-World Applications

Real-World Applications:

Circles are used in many real-world applications, such as:

- Architecture: designing circular buildings and columns
- Engineering: building circular tunnels and pipes
- Landscaping: designing circular gardens and paths

Practice Questions:

1. Give an example of a real-world application of circles in architecture.

2. Give an example of a real-world application of circles in engineering.

Activities

Activity 1: Design a Circular Garden

Design a circular garden with a radius of 5 meters. Calculate the area and circumference of the garden.

Activity 2: Calculate the Circumference of a Pipe

A circular pipe has a diameter of 20 cm. Calculate its circumference.

Challenge Questions

Challenge Questions:

1. A circular track has a circumference of 400 meters. What is its radius?

2. A circular pizza has a diameter of 14 inches. What is its area?

Conclusion

Conclusion:

In this worksheet, you have learned how to calculate the area and circumference of circles using formulas and applied these concepts to real-world problems. Remember to practice regularly to become proficient in these skills.

Answer Key

Answer Key:

1. A = πr^2
2. C = 2πr
3. A = π(4)^2 = 16π cm^2
4. C = π(10) = 10π cm
5. Area = π(5)^2 = 25π m^2, Circumference = 2π(5) = 10π m
6. C = π(20) = 20π cm
7. A = π(3)^2 = 9π m^2
8. r = 400 / (2π) = 200 / π m
9. A = π(7)^2 = 49π in^2
10. C = 2π(2) = 4π m