Classifying Triangles Worksheet Questions and Answers PDF

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Part 1: Building a Foundation

What is the sum of the internal angles in any triangle?

Hint: Think about the properties of triangles.

- ◯ 90 degrees
- ◯ **180 degrees ✓**
- ◯ 270 degrees
- ◯ 360 degrees

> The sum of the internal angles in any triangle is 180 degrees.

Which of the following are characteristics of an equilateral triangle?

Hint: Consider the properties of equal sides and angles.

- ☐ **All sides are equal ✓**
- ☐ **All angles are 60 degrees ✓**
- ☐ Two sides are equal
- ☐ One angle is 90 degrees

> An equilateral triangle has all sides equal and all angles measuring 60 degrees.

Describe the difference between an isosceles triangle and a scalene triangle.

Hint: Think about the equality of sides.

An isosceles triangle has at least two equal sides, while a scalene triangle has all sides of different lengths.

List the three types of triangles classified by their angles.

Hint: Consider the measures of the angles.

1. Type 1

Acute

2. Type 2

Right

3. Type 3

Obtuse

The three types of triangles classified by their angles are acute, right, and obtuse.

Part 2: comprehension and Application

Which type of triangle has one angle greater than 90 degrees?

Hint: Think about the definitions of triangle types.

- ◯ Acute
- ◯ Right
- ◯ **Obtuse ✓**
- ◯ Equilateral

A triangle with one angle greater than 90 degrees is called an obtuse triangle.

Identify the triangles that can have at least two equal sides.

Hint: Consider the definitions of triangle types.

- ☐ **Equilateral ✓**
- ☐ **Isosceles ✓**
- ☐ Scalene
- ☐ Right

Equilateral and isosceles triangles can have at least two equal sides.

Given a triangle with angles 50 degrees and 60 degrees, calculate the measure of the third angle and classify the triangle by its angles.

Hint: Use the property of the sum of angles in a triangle.

The third angle measures 70 degrees, classifying the triangle as acute.

If a triangle has sides measuring 5 cm, 5 cm, and 8 cm, what type of triangle is it based on its sides?

Hint: Consider the equality of the sides.

- ◯ Equilateral
- ◯ **Isosceles ✓**
- ◯ Scalene
- ◯ Right

> This triangle is classified as isosceles because it has two equal sides.

Part 3: Analysis, Evaluation, and Creation

Which of the following statements is true about scalene triangles?

Hint: Think about the properties of scalene triangles.

- ◯ They have at least two equal sides.
- ◯ All angles are equal.
- ◯ **All sides and angles are different. ✓**
- ◯ They have one right angle.

> Scalene triangles have all sides and angles different.

Evaluate the following scenarios and determine which could form a valid triangle.

Hint: Consider the triangle inequality theorem.

- ☐ **Sides measuring 3 cm, 4 cm, and 5 cm ✓**
- ☐ **Angles measuring 60 degrees, 60 degrees, and 60 degrees ✓**
- ☐ Sides measuring 2 cm, 2 cm, and 5 cm
- ☐ **Angles measuring 90 degrees, 45 degrees, and 45 degrees ✓**

> The valid triangles are those with sides 3 cm, 4 cm, 5 cm and angles 90 degrees, 45 degrees, and 45 degrees.

Create a real-world problem involving a triangle, describe the scenario, and explain how you would solve it using triangle properties.

Hint: Think about practical applications of triangles.

A real-world problem could involve calculating the height of a tree using a triangle formed by the ground and the line of sight.

Analyze how the properties of an isosceles triangle can be used to find missing angles when two angles are known.

Hint: Consider the properties of equal angles in isosceles triangles.

In an isosceles triangle, the angles opposite the equal sides are equal, allowing for the calculation of missing angles.