Triangle Sum Theorem Worksheet

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Part 1: Building a Foundation

What is the sum of the interior angles of any triangle?

Hint: Think about the basic properties of triangles.

- ◯ 90 degrees
- ◯ 180 degrees
- ◯ 270 degrees
- ◯ 360 degrees

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Which of the following are types of triangles based on their angles?

Hint: Consider the definitions of different triangles.

- ☐ Equilateral
- ☐ Isosceles
- ☐ Scalene
- ☐ Right

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Explain the Triangle Sum Theorem in your own words.

Hint: Think about how the angles in a triangle relate to each other.

Explain the Triangle Sum Theorem in your own words.

Hint: Consider how the angles relate to each other.

List the three types of triangles based on side lengths and provide one characteristic of each.

Hint: Consider the definitions of triangles based on their sides.

1. Equilateral

2. Isosceles

3. Scalene

If a triangle has two angles measuring 45 degrees and 45 degrees, what type of triangle is it?

Hint: Think about the definitions of triangle types based on angles.

- ◯ Equilateral
- ◯ Isosceles
- ◯ Scalene
- ◯ Right

If a triangle has two angles measuring 45 degrees and 45 degrees, what type of triangle is it?

Hint: Consider the properties of angles in triangles.

- ◯ Equilateral
- ◯ Isosceles
- ◯ Scalene
- ◯ Right

Part 2: Comprehension and Application

Which statements are true about an equilateral triangle?

Hint: Consider the properties of equilateral triangles.

- ☐ All sides are equal.
- ☐ All angles are 60 degrees.
- ☐ It can have a right angle.
- ☐ It is a type of isosceles triangle.

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- ☐ All angles are 60 degrees.
- ☐ It can have a right angle.
- ☐ It is a type of isosceles triangle.

Describe how the Triangle Sum Theorem can be used to find a missing angle in a triangle.

Hint: Think about how you can apply the theorem to solve for unknown angles.

Describe how the Triangle Sum Theorem can be used to find a missing angle in a triangle.

Hint: Consider how the angles relate to each other.

A triangle has angles measuring 70 degrees and 50 degrees. What is the measure of the third angle?

Hint: Use the Triangle Sum Theorem to find the missing angle.

- ◯ 60 degrees
- ◯ 70 degrees
- ◯ 80 degrees
- ◯ 90 degrees

A triangle has angles measuring 70 degrees and 50 degrees. What is the measure of the third angle?

Hint: Use the Triangle Sum Theorem.

- ◯ 60 degrees
- ◯ 70 degrees
- ◯ 80 degrees
- ◯ 90 degrees

In a triangle, if one angle is twice the size of the smallest angle and the third angle is 10 degrees more than the smallest angle, which of the following could be the measures of the angles?

Hint: Set up equations based on the relationships between the angles.

- ☐ 30, 60, 90

- [ ] 40, 80, 60
- [ ] 50, 100, 30
- [ ] 20, 40, 120

In a triangle, if one angle is twice the size of the smallest angle and the third angle is 10 degrees more than the smallest angle, which of the following could be the measures of the angles?

Hint: Use algebra to set up the relationships.

- [ ] 30, 60, 90
- [ ] 40, 80, 60
- [ ] 50, 100, 30
- [ ] 20, 40, 120

Solve for the missing angle in a triangle with angles measuring 85 degrees and 35 degrees. Show your work.

Hint: Use the Triangle Sum Theorem to find the missing angle.

Solve for the missing angle in a triangle with angles measuring 85 degrees and 35 degrees. Show your work.

Hint: Use the Triangle Sum Theorem.

Part 3: Analysis, Evaluation, and Creation

Which of the following statements are correct about the exterior angle of a triangle?

Hint: Think about the properties of exterior angles.

- [ ] It is equal to the sum of the two non-adjacent interior angles.
- [ ] It is always greater than any of the interior angles.
- [ ] It is equal to the adjacent interior angle.
- [ ] It is always less than 180 degrees.

Which of the following statements are correct about the exterior angle of a triangle?

Hint: Think about the properties of exterior angles.

- [ ] It is equal to the sum of the two non-adjacent interior angles.
- [ ] It is always greater than any of the interior angles.
- [ ] It is equal to the adjacent interior angle.
- [ ] It is always less than 180 degrees.

Analyze the relationship between the interior and exterior angles of a triangle and explain how they are related.

Hint: Consider how the angles interact with each other.

Analyze the relationship between the interior and exterior angles of a triangle and explain how they are related.

Hint: Consider the definitions of interior and exterior angles.

Evaluate the following statements and select those that correctly describe the properties of triangles.

Hint: Consider the definitions and properties of triangles.

- [ ] The sum of the angles in a triangle can be more than 180 degrees.
- [ ] An equilateral triangle is also an isosceles triangle.
- [ ] A triangle can have more than one obtuse angle.
- [ ] A right triangle can have two equal angles.

Evaluate the following statements and select those that correctly describe the properties of triangles.

Hint: Consider the definitions and properties of triangles.

- [ ] The sum of the angles in a triangle can be more than 180 degrees.
- [ ] An equilateral triangle is also an isosceles triangle.
- [ ] A triangle can have more than one obtuse angle.
- [ ] A right triangle can have two equal angles.

Create a real-world problem involving a triangle where you need to use the Triangle Sum Theorem to find a missing angle. Provide a solution to your problem.

Hint: Think about a scenario where angles are involved.

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