Triangle Sum 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 properties of an equilateral triangle? (Select all that apply)

Hint: Consider the characteristics that define an equilateral triangle.

- ☐ All sides are equal
- ☐ All angles are 60 degrees
- ☐ It has one right angle
- ☐ It has two equal sides

Which of the following are properties of an equilateral triangle? (Select all that apply)

Hint: Consider the characteristics of equilateral triangles.

- ☐ All sides are equal

- [ ] All angles are 60 degrees
- [ ] It has one right angle
- [ ] It has two equal sides

Explain in your own words what the Triangle Sum Theorem states.

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

Explain in your own words what the Triangle Sum Theorem states.

Hint: Think about the relationship between the angles in a triangle.

List the different types of triangles based on their angles.

Hint: Consider the classifications of triangles by their angles.

1. What are the types of triangles based on angles?

In a right triangle, what is the measure of the right angle?

Hint: Recall the definition of a right triangle.

- ◯ 45 degrees
- ◯ 60 degrees
- ◯ 90 degrees

◯ 120 degrees

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◯ 60 degrees
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◯ 120 degrees

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 triangle
◯ Right triangle
◯ Obtuse triangle
◯ Equilateral triangle

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Hint: Think about the classifications of triangles based on their angles.

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◯ Right triangle
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◯ Equilateral triangle

Which statements are true about an isosceles triangle? (Select all that apply)

Hint: Consider the properties of isosceles triangles.

☐ It has two equal sides
☐ It has three equal angles
☐ It can be a right triangle
☐ It always has an obtuse angle

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Hint: Consider the properties that define an isosceles triangle.

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Describe how the exterior angle of a triangle relates to its interior angles.

Hint: Think about the relationship between interior and exterior angles.

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Hint: Think about the relationship between exterior and interior angles.

If two angles of a triangle are 50 degrees and 60 degrees, what is the measure of the third angle?

Hint: Use the Triangle Sum Theorem to find the answer.

- ◯ 70 degrees
- ◯ 80 degrees
- ◯ 90 degrees
- ◯ 100 degrees

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A triangle has angles expressed as x, 2x, and 3x. Find the value of x and the measures of all three angles.

Hint: Set up an equation based on the Triangle Sum Theorem.

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Part 3: Analysis, Evaluation, and Creation

Analyze the following statements and select those that correctly describe a scalene triangle. (Select all that apply)

Hint: Consider the properties that define a scalene triangle.

- ☐ All sides are different lengths
- ☐ All angles are different
- ☐ It can have a right angle

- [ ] It has two equal sides

Analyze the following statements and select those that correctly describe a scalene triangle. (Select all that apply)

Hint: Consider the properties of scalene triangles.

- [ ] All sides are different lengths
- [ ] All angles are different
- [ ] It can have a right angle
- [ ] It has two equal sides

Given a triangle with angles a, b, and c, where a = b + 10 and c = 2 b, analyze and find the measures of the angles.

Hint: Set up equations based on the relationships given.

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Which statement best evaluates the relationship between the interior and exterior angles of a triangle?

Hint: Think about how exterior angles are defined in relation to interior angles.

- ◯ The exterior angle is always greater than any interior angle
- ◯ The exterior angle is equal to the sum of the two non-adjacent interior angles

- ◯ The exterior angle is always less than any interior angle
- ◯ The exterior angle is equal to the adjacent interior angle

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Hint: Think about the definitions of interior and exterior angles.

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Create a real-world problem involving a triangle, where you need to find a missing angle, and solve it using the Triangle Sum Theorem.

Hint: Think about a scenario where angles are involved.

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