Triangle Congruence Worksheet

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Part 1: Building a Foundation

Which of the following is a criterion for triangle congruence?

Hint: Think about the criteria that can be used to prove triangles are congruent.

- ◯ A) Angle-AngLE-AngLE (AAA)
- ◯ A) Side-Side-Side (SSS)
- ◯ C) Side-AngLE-AngLE (SAA)
- ◯ D) Angle-Side-Side (ASS)

Which of the following is a criterion for triangle congruence?

Hint: Recall the criteria for triangle congruence.

- ◯ A) Angle-AngLE-AngLE (AAA)
- ◯ A) Side-Side-Side (SSS)
- ◯ C) Side-AngLE-AngLE (SAA)
- ◯ D) Angle-Side-Side (ASS)

Select all the criteria that can be used to prove triangle congruence.

Hint: Consider the different combinations of sides and angles.

- ☐ A) Side-Side-Side (SSS)
- ☐ A) Angle-Side-AngLE (ASA)
- ☐ C) Angle-AngLE-Side (AAS)
- ☐ D) Angle-AngLE-AngLE (AAA)

Select all the criteria that can be used to prove triangle congruence.

Hint: Consider the different criteria for triangle congruence.

- ☐ A) Side-Side-Side (SSS)

- [ ] A) Angle-Side-AngLE (ASA)
- [ ] C) Angle-AngLE-Side (AAS)
- [ ] D) Angle-AngLE-AngLE (AAA)

Explain why the Angle-AngLE-AngLE (AAA) criterion is not sufficient to prove triangle congruence.

Hint: Consider the implications of having equal angles.

Explain why the Angle-AngLE-AngLE (AAA) criterion is not sufficient to prove triangle congruence.

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List the congruence criteria that involve angles.

Hint: Think about the criteria that include angle measurements.

1. What is ASA?

2. What is AAS?

3. What is ASS?

Which congruence criterion is specifically applicable to right triangles?

Hint: Consider the special properties of right triangles.

- ◯ A) Side-Side-Side (SSS)
- ◯ A) Hypotenuse-Leg (HL)
- ◯ C) Angle-Side-AngLE (ASA)
- ◯ D) Side-AngLE-Side (SAS)

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- ◯ C) Angle-Side-AngLE (ASA)
- ◯ D) Side-AngLE-Side (SAS)

Part 2: Application and Analysis

Given triangles ABC and DEF, if AB = DE, AC = DF, and ∠A = ∠D, which congruence criterion can be used to prove the triangles are congruent?

Hint: Look for the combination of sides and angles provided.

- ◯ A) SSS
- ◯ A) SAS
- ◯ C) ASA
- ◯ D) AAS

Given triangles ABC and DEF, if AB = DE, AC = DF, and ∠A = ∠D, which congruence criterion can be used to prove the triangles are congruent?

Hint: Consider the sides and angles given.

- ◯ A) SSS
- ◯ A) SAS
- ◯ C) ASA
- ◯ D) AAS

In a real-world scenario, which of the following can be used to determine if two triangular plots of land are congruent?

Hint: Think about the measurements that would confirm congruence.

- [ ] A) Measure all three sides of both triangles.
- [ ] A) Measure two sides and the included angle of both triangles.
- [ ] C) Measure two angles and a non-included side of both triangles.
- [ ] D) Measure two angles and the included side of both triangles.

In a real-world scenario, which of the following can be used to determine if two triangular plots of land are congruent?

Hint: Think about the measurements needed.

- [ ] A) Measure all three sides of both triangles.
- [ ] A) Measure two sides and the included angle of both triangles.
- [ ] C) Measure two angles and a non-included side of both triangles.
- [ ] D) Measure two angles and the included side of both triangles.

Imagine you are designing a triangular garden. Explain how you would use the congruence criteria to ensure that two triangular sections of the garden are identical.

Hint: Consider the criteria that would apply to your design.

Imagine you are designing a triangular garden. Explain how you would use the congruence criteria to ensure that two triangular sections of the garden are identical.

Hint: Consider the criteria that would apply.

Analyze the relationship between the congruence criteria and the properties of congruent triangles. How do these criteria ensure the triangles are identical in shape and size?

Hint: Consider the implications of congruence.

Analyze the relationship between the congruence criteria and the properties of congruent triangles. How do these criteria ensure the triangles are identical in shape and size?

Hint: Consider how the criteria relate to the properties of triangles.

Part 3: Evaluation and Creation

Which of the following statements best evaluates the effectiveness of the Side-Side-Side (SSS) criterion in proving triangle congruence?

Hint: Consider the implications of measuring all sides.

◯ A) It is the least effective because it requires measuring all sides.

- ◯ A) It is effective because it guarantees all corresponding angles are equal.
- ◯ C) It is ineffective because it does not consider angles.
- ◯ D) It is effective because it ensures all corresponding sides are equal.

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Hint: Consider the implications of measuring sides.

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- ◯ A) It is effective because it guarantees all corresponding angles are equal.
- ◯ C) It is ineffective because it does not consider angles.
- ◯ D) It is effective because it ensures all corresponding sides are equal.

Evaluate the following statements about triangle congruence and select the correct ones:

Hint: Think about the definitions of congruence.

- ☐ A) Congruent triangles can be different sizes.
- ☐ A) Congruent triangles can be different shapes.
- ☐ C) Congruent triangles have the same shape and size.
- ☐ D) Congruent triangles have corresponding angles and sides equal.

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Hint: Consider the definitions of congruence.

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- ☐ D) Congruent triangles have corresponding angles and sides equal.

Create a real-world problem involving triangle congruence and provide a solution using one of the congruence criteria.

Hint: Think about a scenario where triangle congruence is applicable.

Create a real-world problem involving triangle congruence and provide a solution using one of the congruence criteria.

Hint: Think about a practical application of congruence.

Propose two different scenarios where triangle congruence could be used in architectural design. Provide a brief explanation for each scenario.

Hint: Consider how congruence might be important in design.

1. Scenario 1: Roof trusses.

2. Scenario 2: Window frames.