

Foundations of Math 2
Unit 7 Study Guide
Congruence

Key Terms:

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|-----------------------------|---|--|---------------------------------|
| ○ Angle-Angle-Side | ○ Angle-Side-Angle | ○ Congruence | ○ Congruent Polygons |
| ○ Hypotenuse | ○ Hypotenuse-Leg | ○ Legs of a Triangle | ○ Corollary |
| ○ Side-Angle-Side | ○ Side-Side-Side | ○ Supplementary | ○ Corresponding Angles |
| ○ Alternate Exterior Angles | ○ Alternate Interior Angles | ○ Base Angles of an Isosceles Triangle | ○ Base of an Isosceles Triangle |
| ○ Same-Side Interior Angles | ○ Vertex Angle of an Isosceles Triangle | ○ Leg of an Isosceles Triangle | |

Material by Subject:

7.1. Special Angle Relationships

- Given two parallel lines and a transversal, be able to identify:
 - Corresponding angles
 - Alternate exterior angles
 - Alternate interior angles
 - Consecutive interior angles
- Be able to relate two angles formed by parallel lines and a transversal.
- Be familiar with linear pairs

7.2. Proving Lines Parallel

- Understand that the converse of a theorem or postulate switches the “if” and “then” statements of the original theorem or postulate.
- Be able to read a flow-proof
- Know how to find the relationship between two angles on a transversal.
- Given angle measurements for two lines and a transversal, be able to determine whether the lines are parallel or not.

7.3. Definition of Congruent Figures and SSS/SAS

- Know the definition of congruence
- Given a marked diagram, be able to identify the congruent angles/sides of a polygon
- Be able to use congruent parts to solve for angles/sides of a shape.
- Understand the reflexive property of congruence
- Know the difference between SSS and SAS postulates
- Be able to identify an included angle/side
- Given a diagram, be able to determine which postulate or theorem is needed to prove the two triangles congruent.

7.4. ASA, AAS, HL

- Know the difference between ASA Postulate, AAS Theorem, and HL Theorem
- Be able to determine which side is the hypotenuse in a right triangle.
- Given a diagram, be able to determine which postulate or theorem is needed to prove the two triangles congruent.
- Be able to apply all 5 congruence postulates/theorems to real-life situations (word problems)

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7.5. Congruent Parts of Congruent Triangles are Congruent

- Be able to apply the definition of congruence to parts of congruent triangles.
- Using the 5 congruence postulates/theorems, be able to prove that two triangles are congruent.
- Once two triangles have been proven congruent, know that all of their corresponding parts are congruent. Be able to apply this to a proof.

7.6. Isosceles Triangles

- Know the parts of an isosceles triangle
- Using theorems about isosceles triangles, be able to prove that a triangle is or is not an isosceles triangle.
- Given two congruent isosceles triangles, be able to solve for the parts of one given information about the other.
- Be able to use the corollaries to the Isosceles Triangle Theorem and the Converse of the Isosceles Triangle Theorem to prove a triangle is equilateral or equiangular.
- Be able to use your knowledge of equilateral triangles to calculate angle measurements on a diagram.