4.4/4.5a - Proving Triangles Congruent

1) Check and Correct Assignment

2) Quiz 4.3

3) Notes: Proving Triangles Congruent (Lots!!!, but very important)

4) Assignment Time

5) Idea of next 2 sections

Pg. 234 #3-10, 13-19, 23, 24, 31
4.4 Proving Triangles Congruent

Sometimes, not "all 6" corresponding parts of triangles need to be congruent in order to prove congruency.

**Side-Side-Side (SSS)**

-if three sides of one triangle are congruent to three sides of another triangle, then the two triangles are congruent.

\[ \triangle ABC \cong \triangle EDF \] by SSS

**Side-Angle-Side (SAS)**

-if two sides of one triangle are congruent to two sides of another triangle and the included angles are congruent, then the triangles are congruent.

\[ \triangle ABC \cong \triangle EDF \] by SAS
4.4 Proving Triangles Congruent

Sometimes, not "all 6" corresponding parts of triangles need to be congruent in order to prove congruency.

**Angle-Side-Angle (ASA)**

- if two angles of one triangle are congruent to two angles of another triangle and the included sides are congruent, then the two triangles are congruent.

\[ \triangle DEF \cong \triangle ABC \text{ by ASA} \]

**Angle-Angle-Side (AAS)**

- if two angles of one triangle are congruent to two angles of another triangle and two corresponding non-included sides are congruent, then the triangles are congruent (an extension of ASA).

\[ \triangle ABC \cong \triangle DFE \text{ by AAS} \]

\[ \triangle ABC \cong \triangle DFE \text{ by AAS} \]
4.4 Proving Triangles Congruent

**Hypotenuse - Leg (HL)**
- if two right triangles have their hypotenuses congruent and a pair of corresponding legs congruent, then the triangles are congruent

\[ \triangle ABC \cong \triangle EDF \]

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Example 1: Tell which triangles are congruent and why.

\[ \triangle AEC \cong \triangle FDB \] by ASA
Example 2: Tell which triangles are congruent and why.

\[ \triangle TWY \cong \triangle VWZ \] by SAS

Assignment (Due Wednesday, November 19)

1) Pg. 245 #8, 9, 14-18, 28-31
2) Pg. 256 #7, 8, 14-17, 26-29
3) Retake Test 3 by Wednesday, December 3