

Cornell Notes

Name: \_\_\_\_\_

Date: \_\_\_\_\_

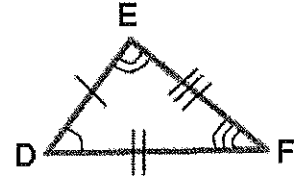
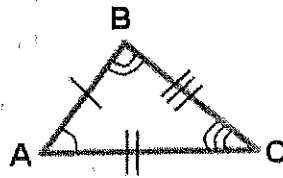
4.1 and 4.2

Main Ideas/Questions

Title of Notes: **Congruent Triangles Part 1**

When two triangles are congruent, there are 6 facts that are true about the triangles:

- there are 3 sets of congruent (equal) sides *and*
- there are 3 sets of congruent (equal) angles.



$$\triangle ABC \cong \triangle DEF$$

List 6 facts that are true the triangles.

$$\angle A \cong \angle D$$

$$\overline{AB} \cong \overline{DE}$$

$$\angle B \cong \angle E$$

$$\overline{BC} \cong \overline{EF}$$

$$\angle C \cong \angle F$$

$$\overline{AC} \cong \overline{DF}$$

**There are 4 ways to Prove Triangles are Congruent**

Similarity

① AA

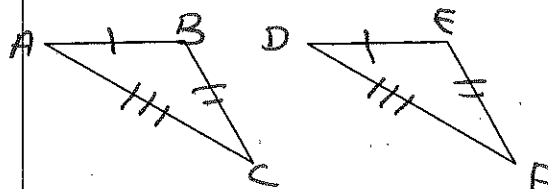
② SSS

③ SAS

1. Side-Side-Side (SSS) Postulate
2. Side-Angle-Side (SAS) Postulate
3. Angle-Side-Angle (ASA) Postulate
4. Angle-Angle-Side (AAS) Postulate

**I. Side-Side-Side (SSS) Postulate:** If three sides of one triangle are congruent to three sides of another triangle, the triangles are congruent.

EX. Name the triangles and add congruent marking to complete the congruent statement.



$$\triangle ABC \cong \triangle DEF$$

by SSS

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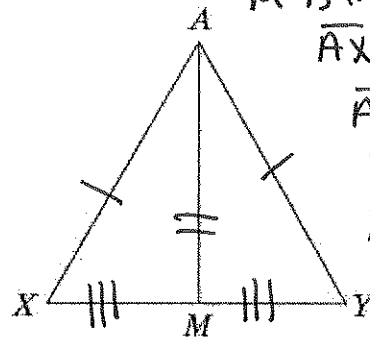
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Main Ideas/Questions

Title of Notes: **Cont'd**

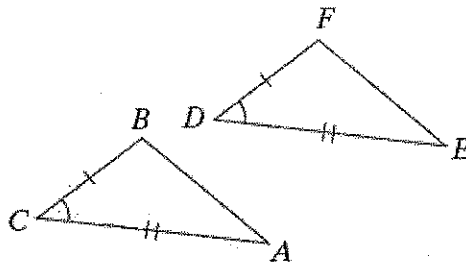
*Given:*  $M$  is the midpoint of  $\overline{XY}$ ,  $\overline{AX} \cong \overline{AY}$

*Prove:*  $\triangle AMX \cong \triangle AMY$

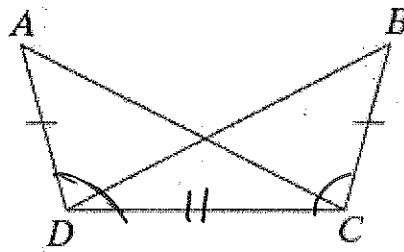


Conclusions	Reasons
$M$ is the midpt of $\overline{XY}$	Given
$\overline{AX} \cong \overline{AY}$	Given
$\overline{AM} \cong \overline{AM}$	Reflexive Property
$\overline{XM} \cong \overline{MY}$	def. of midpt.
$\triangle AMX \cong \triangle AMY$	SSS

**II. Side-Angle-Side (SAS) Postulate:** If two sides and the included angle of one triangle are congruent to the corresponding parts of another triangle, the triangles are congruent.  $\triangle CBA \cong \triangle DFE$



EX 2: What other information do you need to prove the triangles are congruent by SAS?



$\angle ADC \cong \angle BCD$