

Name: Key
 Geometry

Date: _____
 Band: _____

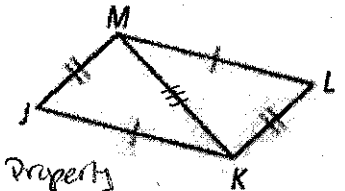
LT#2: Prove two triangles congruent using the SSS and SAS Postulates.

1. Given: $\overline{JK} \cong \overline{LM}$, $\overline{JM} \cong \overline{LK}$
 Prove: $\triangle JKM \cong \triangle LMK$

$\overline{JK} \cong \overline{LM}$
 Given

$\overline{JM} \cong \overline{LK}$
 a. ? Given

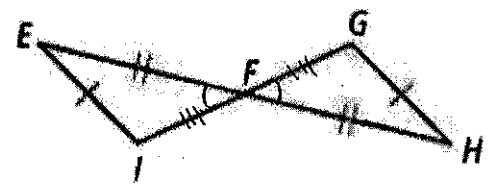
$\overline{KM} \cong \overline{KM}$
 b. ?



Reflexive Property of Congruence

$\triangle JKM \cong \triangle LMK$
 c. ? = d. ?
 SSS

2. Given: $\overline{IE} \cong \overline{GH}$, $\overline{EF} \cong \overline{HF}$, F is the midpoint of \overline{GI}
 Prove: $\triangle EFI \cong \triangle HFG$



$\overline{IE} \cong \overline{GH}$, $\overline{EF} \cong \overline{HF}$, F is the midpt of \overline{GI}
 Given

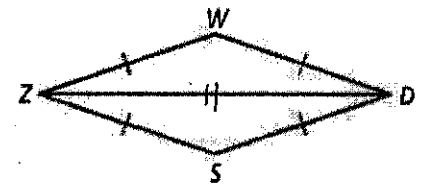
$\overline{GF} \cong \overline{IF}$
 Def. of midpt

$\angle EFI \cong \angle HFG$
 Vertical Angles thrm

$\triangle EFI \cong \triangle HFG$
 SSS

$\triangle EFI \cong \triangle HFG$
 SAS

3. Given: $\overline{WZ} \cong \overline{ZS} \cong \overline{SD} \cong \overline{DW}$
 Prove: $\triangle WZD \cong \triangle SDZ$



$\overline{WZ} \cong \overline{ZS} \cong \overline{SD} \cong \overline{DW}$
 Given

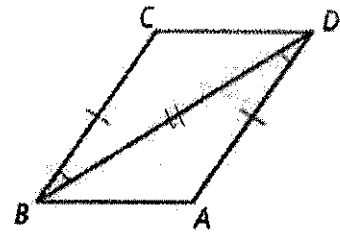
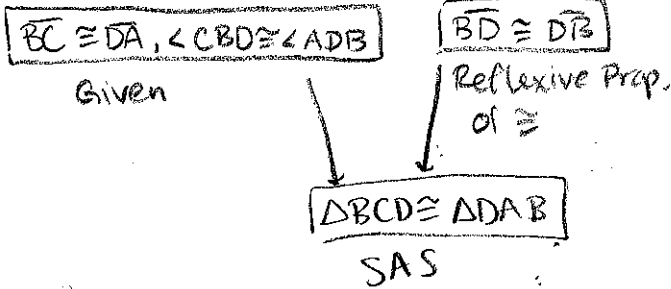
$\overline{ZD} \cong \overline{DZ}$
 Reflexive Prop. of \cong

$\triangle WZD \cong \triangle SDZ$
 SSS

4-2: SSS and SAS Proofs

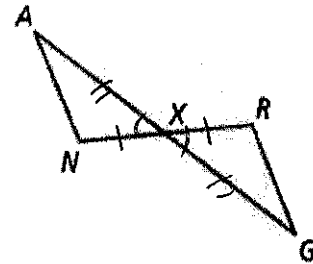
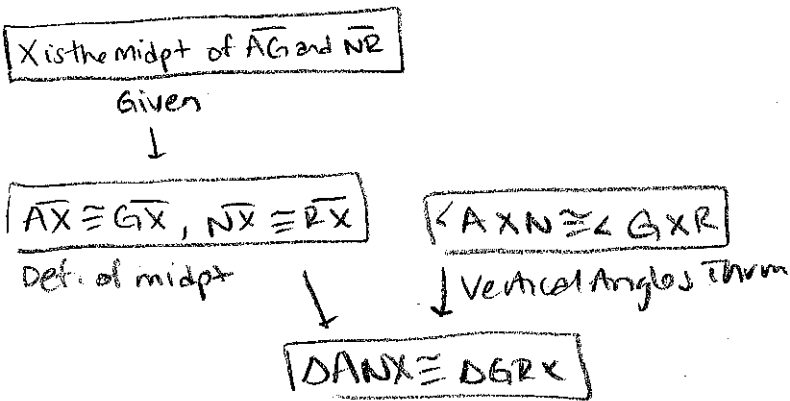
4. Given: $\overline{BC} \cong \overline{DA}$, $\angle CBD \cong \angle ADB$

Prove: $\triangle BCD \cong \triangle DAB$



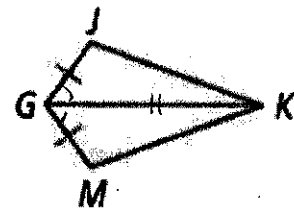
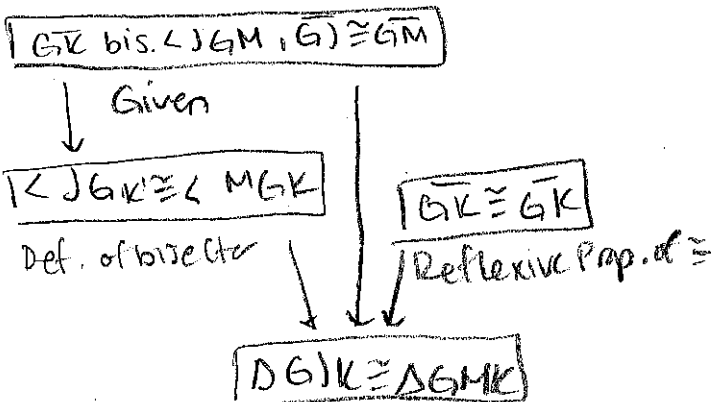
5. Given: X is the midpoint of \overline{AG} and \overline{NR}

Prove: $\triangle ANX \cong \triangle GRX$



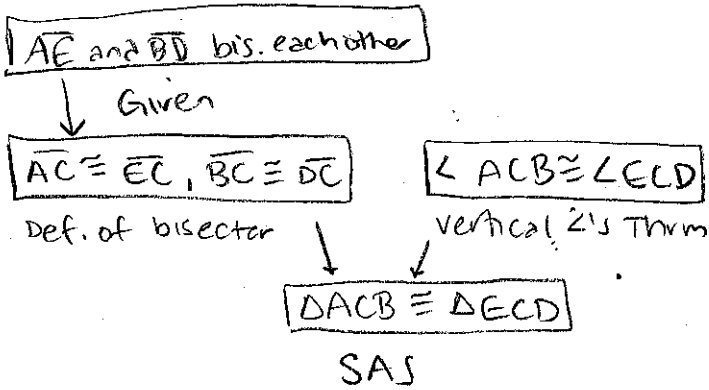
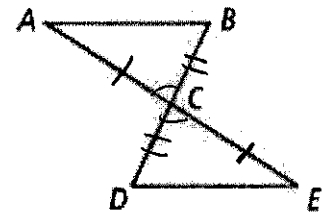
6. Given: \overline{GK} bisects $\angle JGM$, $\overline{GJ} \cong \overline{GM}$

Prove: $\triangle GJK \cong \triangle GMK$

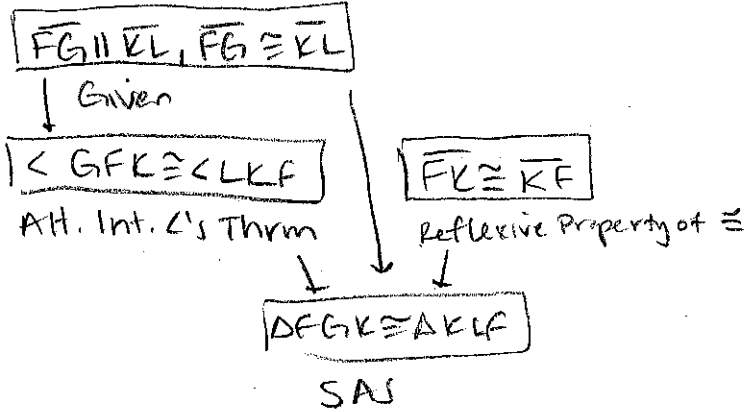
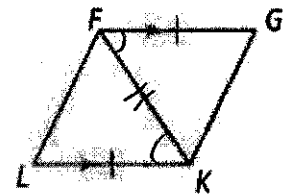


4-2: SSS and SAS Proofs

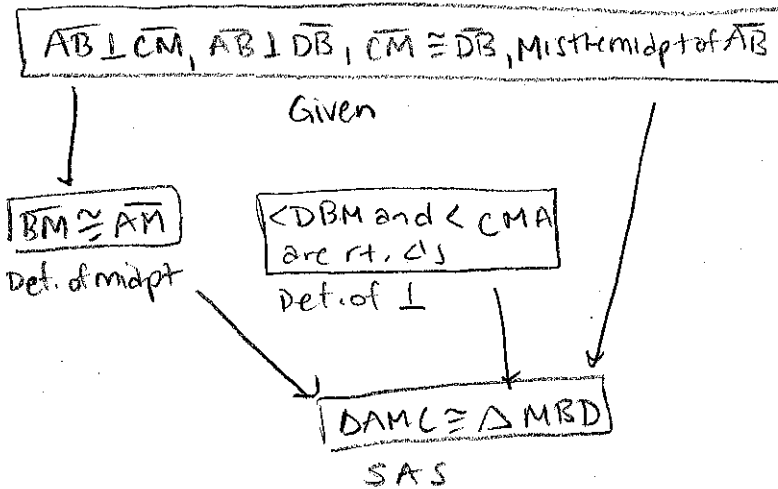
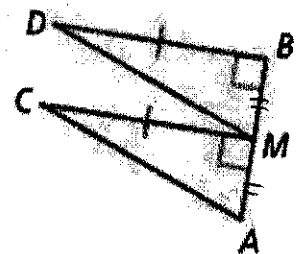
7. **Given:** \overline{AE} and \overline{BD} bisect each other
Prove: $\triangle ACB \cong \triangle ECD$



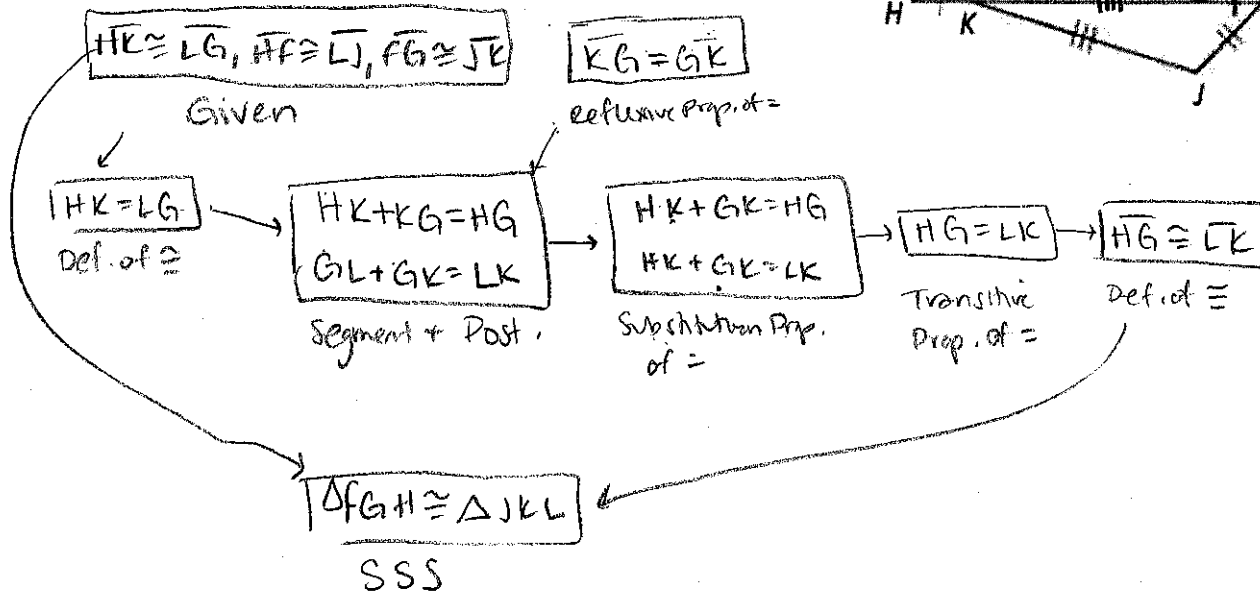
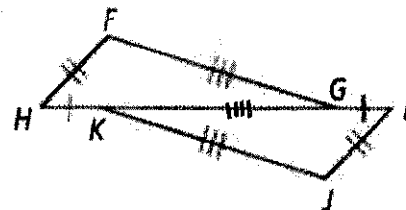
8. **Given:** $\overline{FG} \parallel \overline{KL}, \overline{FG} \cong \overline{KL}$
Prove: $\triangle FGK \cong \triangle KLF$



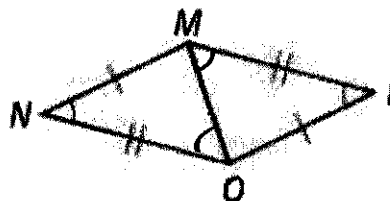
9. **Given:** $\overline{AB} \perp \overline{CM}, \overline{AB} \perp \overline{DB}, \overline{CM} \cong \overline{DB}, M$ is the midpoint of \overline{AB}
Prove: $\triangle AMC \cong \triangle MBD$



10. Given: $\overline{HK} \cong \overline{LG}$, $\overline{HF} \cong \overline{LJ}$, $\overline{FG} \cong \overline{JK}$
 Prove: $\triangle FGH \cong \triangle JKL$



11. Given: $\angle N \cong \angle L$, $\overline{MN} \cong \overline{OL}$, $\overline{NO} \cong \overline{LM}$
 Prove: $\overline{MN} \parallel \overline{OL}$



$\angle N \cong \angle L, \overline{MN} \cong \overline{OL}, \overline{NO} \cong \overline{LM}$

Given

$\triangle MNO \cong \triangle OLM$

SAS

$\angle LMO \cong \angle NOM$

C.P.C.T.C.

$\overline{MN} \parallel \overline{OL}$

Conv. of Alt. Int. \angle 's Thrm