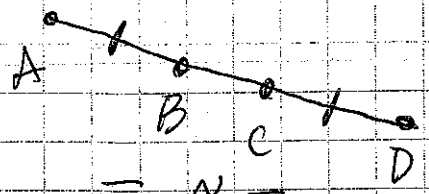
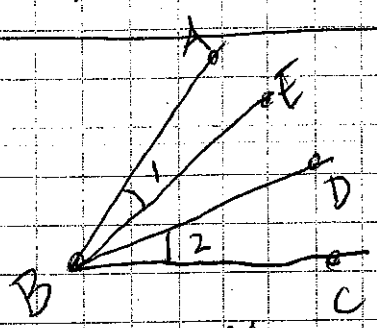
8/21

Addition Property

If a segment (or an ∠) is added to congruent ($\cong$) segments (or ∠'s), then the sums are congruent.

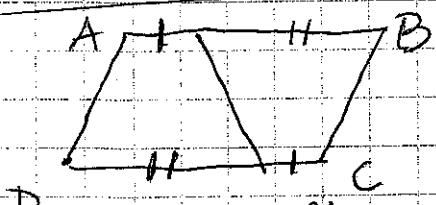


If $\overline{AB} \cong \overline{CD}$,
then $\overline{AC} \cong \overline{BD}$

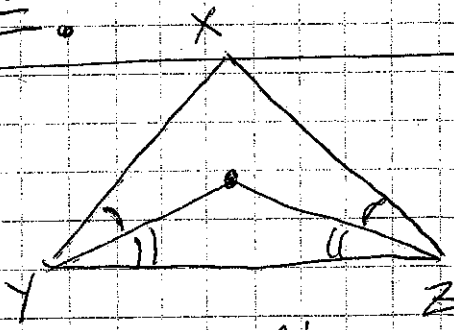


If $\angle 1 \cong \angle 2$,
then $\angle ABC \cong \angle EBC$

If $\cong$ segments (or ∠'s) are added to $\cong$ segments (or ∠'s) then the sums are $\cong$.

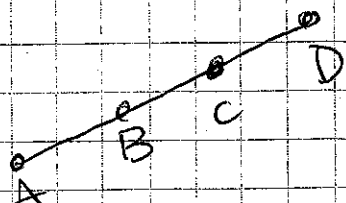


$\overline{AB} \cong \overline{CD}$
b/c of add. prop.



$\angle XYZ \cong \angle XZY$,
b/c of add. prop.

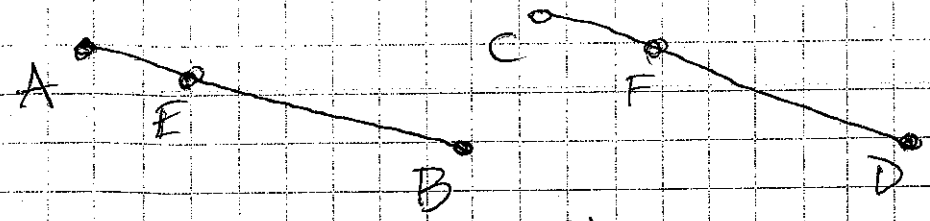
Proof Given: B & C trisect $\overline{AD}$
Prove: $\overline{AC} \cong \overline{BD}$



Statements	Reasons
① B & C tris. $\overline{AD}$	① Given
② $\overline{AB} \cong \overline{CD} \cong \overline{BC}$	② Def of tris.
③ $\overline{AC} \cong \overline{BD}$	③ Add. prop

Subtraction Property

If a segment (or $\cong$ segments) is subtracted from $\cong$ segments, then the differences are $\cong$



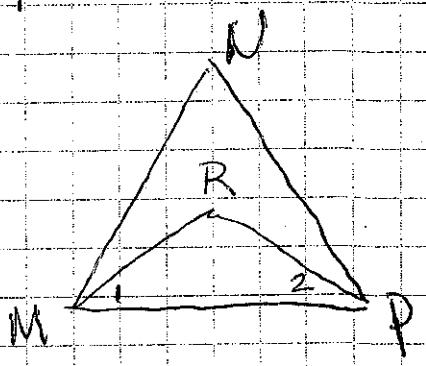
if $\overline{AB} \cong \overline{CD}$ & $\overline{AE} \cong \overline{CF}$, then $\overline{EB} \cong \overline{FD}$.

"This works the same way for $\angle$'s."

Proof

Given: $\angle NMP \cong \angle NPM$
$\angle 1 \cong \angle 2$

Prove: $\angle NMR \cong \angle NPR$



Statements	Reasons
① $\angle NMP \cong \angle NPM$, $\angle 1 \cong \angle 2$	① Given
② $\angle NMR \cong \angle NPR$	② Subtraction prop.

Do # 1, 2, 4, 9-12, 17, 19