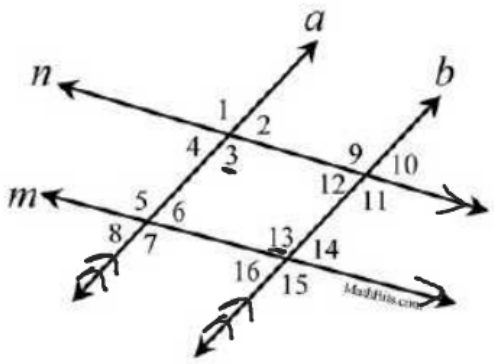
1.

Given: $m \parallel n$ and $a \parallel b$

Prove: $\angle 3 \cong \angle 13$

Proof



Statement	Reason
1) $m \parallel n$; $a \parallel b$	1) Given
2) $\angle 3 \cong \angle 7$	2) Corresponding $\angle$'s
3) $\angle 7 \cong \angle 13$	3) Alternate Interior $\angle$'s
4) $\angle 3 \cong \angle 13$	4) Substitution prop

2) $\angle 3$ & $\angle 6$ are supp
$\angle 6$ & $\angle 13$ are supp

$m\angle 3 + m\angle 6 = 180$
$m\angle 6 + m\angle 13 = 180$

$m\angle 3 + m\angle 6 = m\angle 6 + m\angle 13$

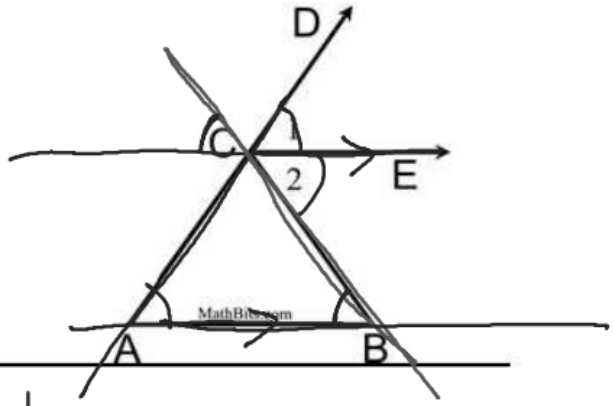
$m\angle 3 = m\angle 13$

Bisect
↳ cut in half

Given: ~~$\overline{AD}$~~, $\overline{CE}$ bis $\angle DCB$

$\overline{CE} \parallel \overline{AB}$

Prove: $\angle A \cong \angle B$



Proof

Statement	Reason
1) $\overline{CE} \parallel \overline{AB}$ $\overline{CE}$ bisects $\angle DCB$	1) Given
2) $\angle 1 \cong \angle 2$	2) Def of Bisector
3) $\angle 1 \cong \angle A$	3) Corresponding $\angle$'s
4) $\angle D \cong \angle 2$	4) Alternate Interior $\angle$'s
5) $\angle A \cong \angle B$	5) Substitution prop.