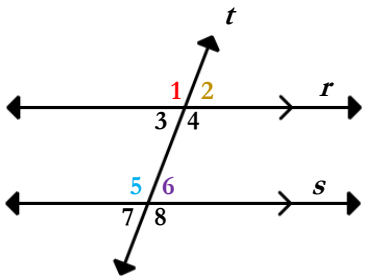
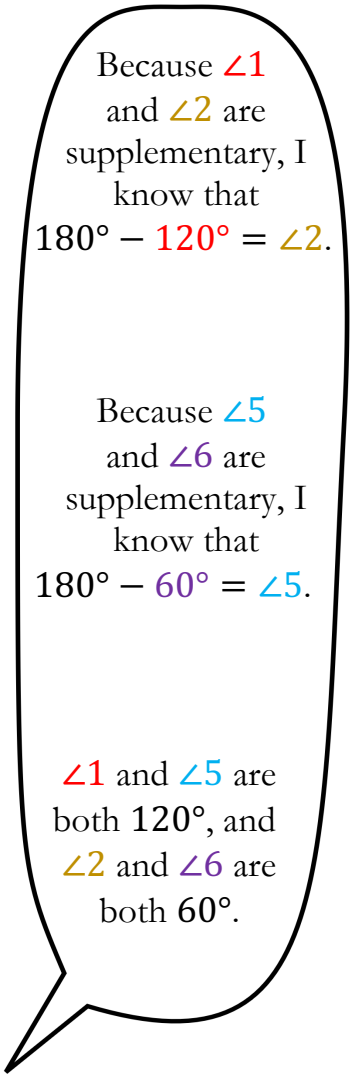
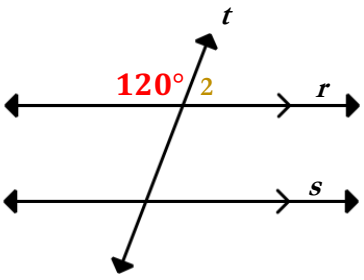
Lines *r* and *s* are parallel. Alex finds the relationship between ∠1 & ∠5 and ∠2 & ∠6. Morgan finds the relationship between ∠3 & ∠7 and ∠4 & ∠8.

Alex's "Above the Line" Method

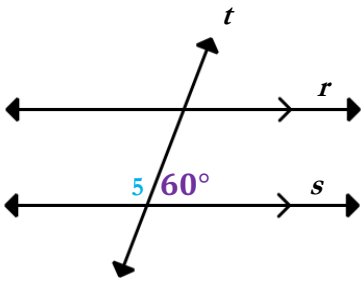
$m\angle 1 = 120°$
$m\angle 6 = 60°$



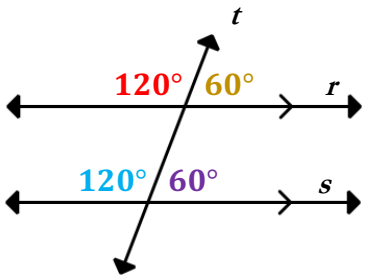




$180° - 120° = 60°$



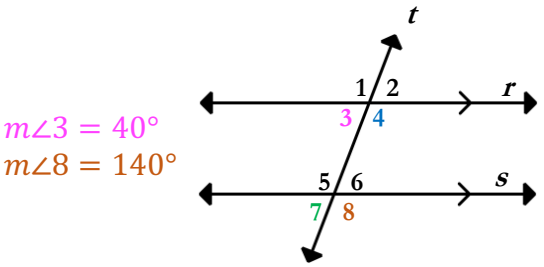
$180° - 60° = 120°$



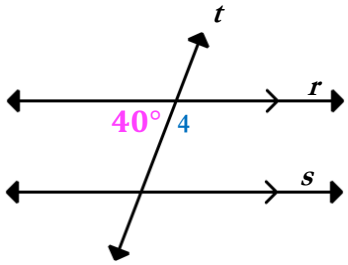
$\angle 1 \cong \angle 5$
$\angle 2 \cong \angle 6$

Lines *r* and *s* are parallel. Alex finds the relationship between ∠1 & ∠5 and ∠2 & ∠6. Morgan finds the relationship between ∠3 & ∠7 and ∠4 & ∠8.

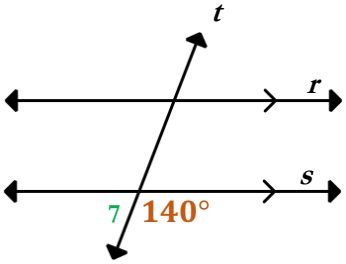
Morgan's "Below the Line" Method



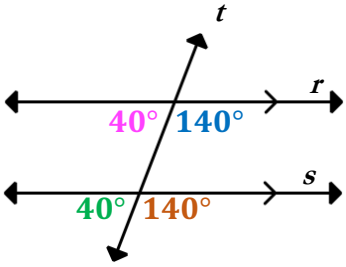
$m\angle 3 = 40°$
$m\angle 8 = 140°$



$180° - 40° = 140°$



$180° - 140° = 40°$



$\angle 3 \cong \angle 7$
$\angle 4 \cong \angle 8$

Because ∠3 and ∠4 add to 180°, I know $180° - 40° = \angle 4$.

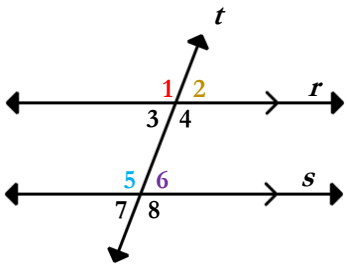
Because ∠7 and ∠8 add to 180°, I know that $180° - 140° = \angle 7$.

∠3 and ∠7 are both 40°, and ∠4 and ∠8 are both 140°.

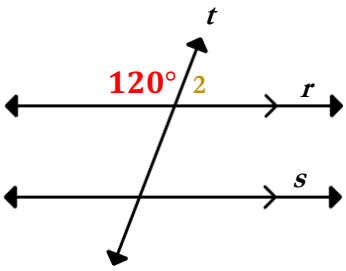
Lines *r* and *s* are parallel. Alex finds the relationship between ∠1 & ∠5 and ∠2 & ∠6. Morgan finds the relationship between ∠3 & ∠7 and ∠4 & ∠8.

Alex's "Above the Line" Method

$m\angle 1 = 120°$
$m\angle 6 = 60°$

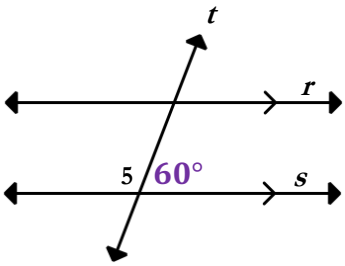


Because ∠1 and ∠2 are supplementary, I know that $180° - 120° = \angle 2$.



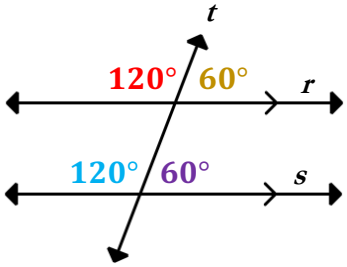
$180° - 120° = 60°$

Because ∠5 and ∠6 are supplementary, I know that $180° - 60° = \angle 5$.



$180° - 60° = 120°$

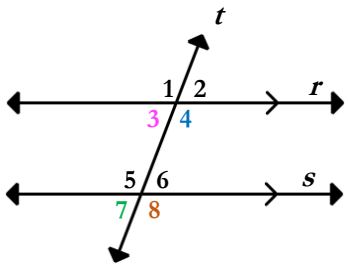
∠1 and ∠5 are both 120°, and ∠2 and ∠6 are both 60°.



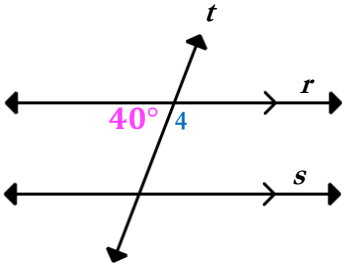
$\angle 1 \cong \angle 5$
$\angle 2 \cong \angle 6$

Morgan's "Below the Line" Method

$m\angle 3 = 40°$
$m\angle 8 = 140°$

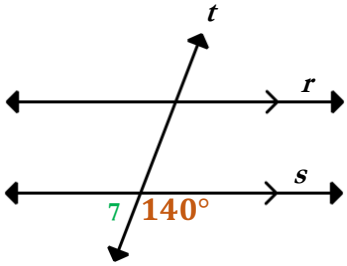


Because ∠3 and ∠4 add to 180°, I know $180° - 40° = \angle 4$.



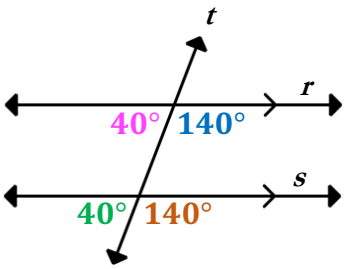
$180° - 40° = 140°$

Because ∠7 and ∠8 add to 180°, I know that $180° - 140° = \angle 7$.



$180° - 140° = 40°$

∠3 and ∠7 are both 40°, and ∠4 and ∠8 are both 140°.



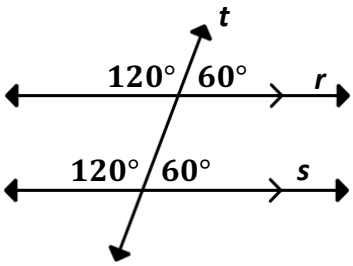
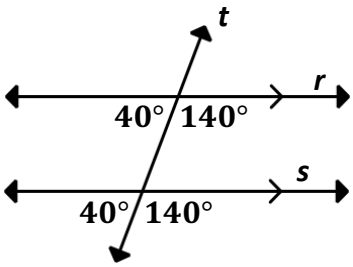
$\angle 3 \cong \angle 7$
$\angle 4 \cong \angle 8$

A.2: *Corresponding Angles*

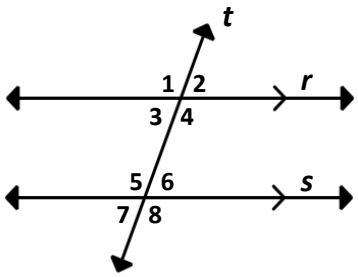
1) What are the similarities and differences between Alex and Morgan's methods?

Similarities	Differences

2) Find the remaining angles for Alex and Morgan.

Alex	Morgan
	

3) a) Identify all the angles that are congruent to ∠1.



b) Identify all the angles that are congruent to ∠2.

c) What do you notice about the angles congruent to ∠1 and ∠2?

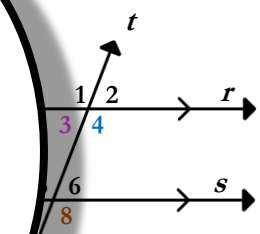
4) If lines *r* and *s* were not parallel, would Alex and Morgan have found the same relationships between their angles? Draw a picture to illustrate why or why not.

A.2: *Corresponding Angles*

Lines *r* and *s* are parallel. Alex finds th… shi… ∠1 & ∠5 and ∠2 & ∠6.
Morgan finds … d ∠4 & ∠8.

Alex's … the Line" Method

$m\angle$
$m\angle$



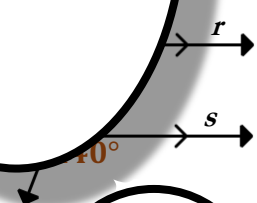
When two parallel lines are cut by a transversal, angles in matching corners are called corresponding angles.

I noticed these angles are always congruent!

Because ∠3 and ∠4 add to 180°, I know 180° − 40° = ∠4.

1…

supplem… know t…
180° − 60° = …

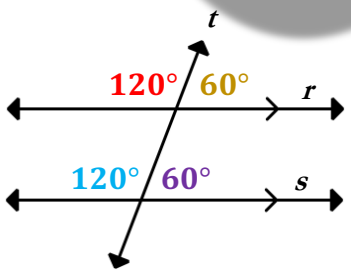


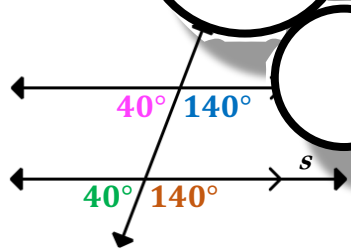
Because ∠7 and ∠8 add to 180°, I know that 180° − 140° = ∠7.

180° − 6…

180° − 1…

∠1 and ∠5 are both 120°, and ∠2 and ∠6 are both 60°.





∠3 and ∠7 are both 40°, and ∠4 and ∠8 are both 140°.

∠1 ≅ ∠5
∠2 ≅ ∠6

∠3 ≅ ∠7
∠4 ≅ ∠8