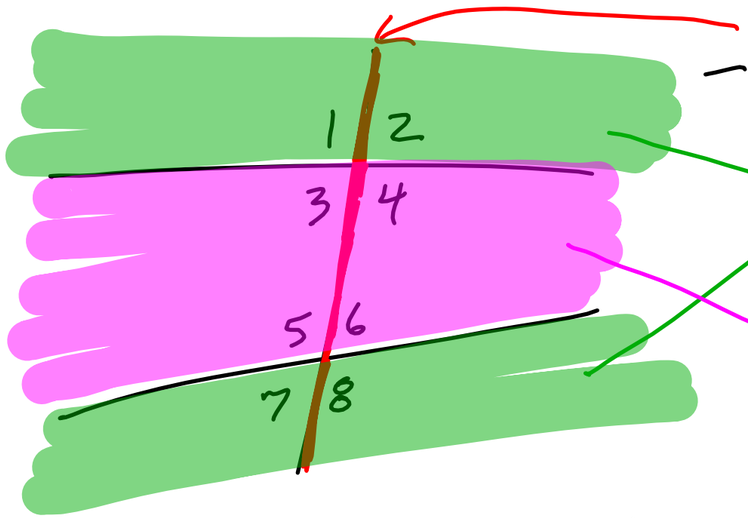
Lines & Angles



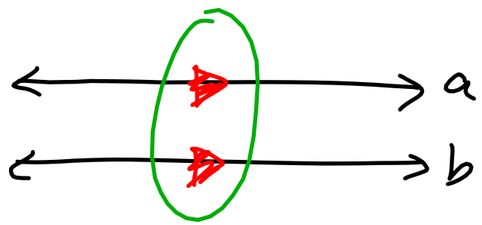
- transversal → line that cuts 2 other lines at distinct points

exterior

interior

- corresponding ∠'s → ∠'s in "same spot"
  EX → ∠1 & ∠5, ∠3 & ∠7, ∠2 & ∠6, ∠4 & ∠8
- alternate exterior ∠'s → exterior ∠'s on opposite sides of transversal (NOT side-by-side!!!)
  EX → ∠1 & ∠8, ∠2 & ∠7
- alternate interior ∠'s → interior ∠'s on opposite side of transversal (NOT side-by-side!!!)
  EX → ∠3 & ∠6, ∠4 & ∠5
- same-side interior ∠'s → interior ∠'s on same side of transversal
  EX → ∠3 & ∠5 ∠4 & ∠6

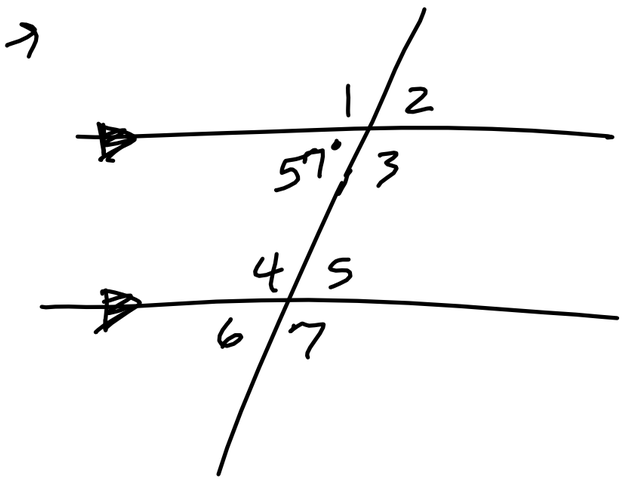
- parallel lines → never intersect, go in same direction



$a \parallel b$

- If 2 lines are parallel, ...
  - → Same-Side Int. ∠ Postulate ⇒ ... then same-side interior ∠'s are supplementary
  - → Alternate Interior ∠ Theorem ⇒ ... then alternate interior ∠'s are congruent
  - → Corresponding ∠ Theorem ⇒ ... then corresponding ∠'s are congruent
  - → Alternate Exterior ∠ Theorem ⇒ ... then alternate exterior ∠'s are congruent

EX →



$m\angle 1 = 123°$
$m\angle 2 = 57°$
$m\angle 3 = 123°$
$m\angle 4 = 123°$
$m\angle 5 = 57°$
$m\angle 6 = 57°$
$m\angle 7 = 123°$

- What if we are trying to show lines are parallel?
  - → Converse of SSI ∠ Postulate ⇒ If SSI ∠'s are supplementary, then lines are ∥
  - → Converse of Alt. Int. ∠ Thm. ⇒ If Alt. Int. ∠'s are ≅, then lines are ∥
  - → Converse of Alt. Ext. ∠ Thm. ⇒ If Alt. Ext. ∠'s are ≅, then lines are ∥
  - → Converse of Corr. ∠'s Thm. ⇒ If Corr. ∠'s are ≅, then lines are ∥

p. 144 → 21-24

HW: p. 153 → 7-9, 12-20

p. 161 → 12-16, 27, 28