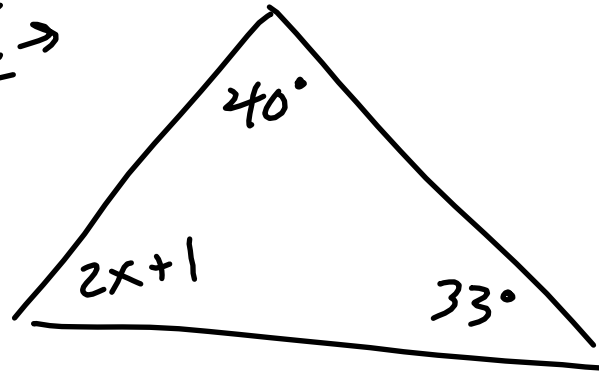


# Lines + Triangles

- Triangle Sum Theorem  $\rightarrow$   $\angle$ 's in a triangle add to  $180^\circ$

-EX  $\rightarrow$



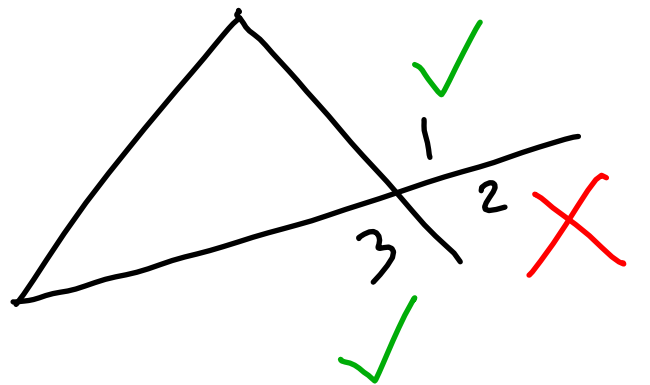
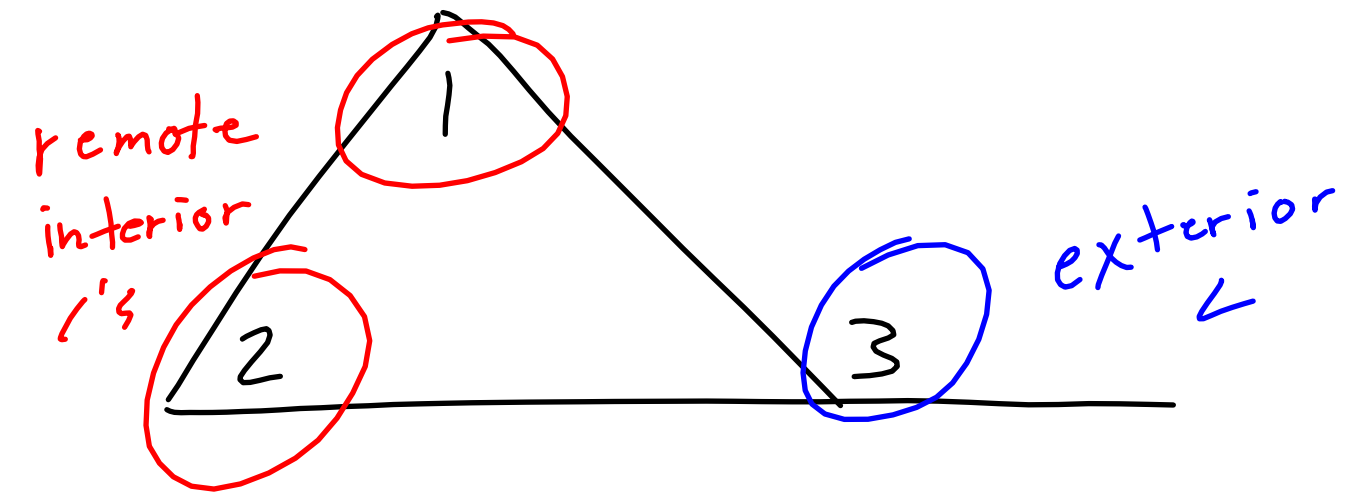
$$40 + 33 + 2x + 1 = 180$$

$$2x + 74 = 180$$

$$2x = 106$$

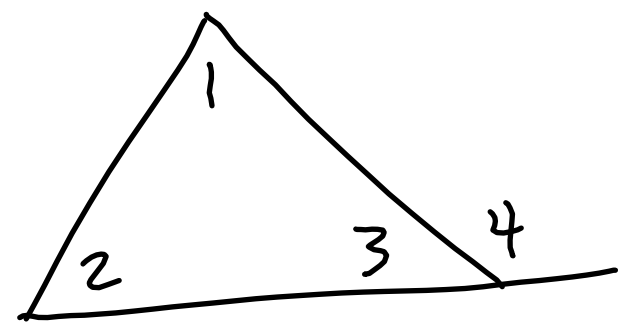
$$x = 53$$

- Exterior  $\angle$ 's  $\rightarrow$   $\angle$  made by extending side of triangle (ONE SIDE ONLY)

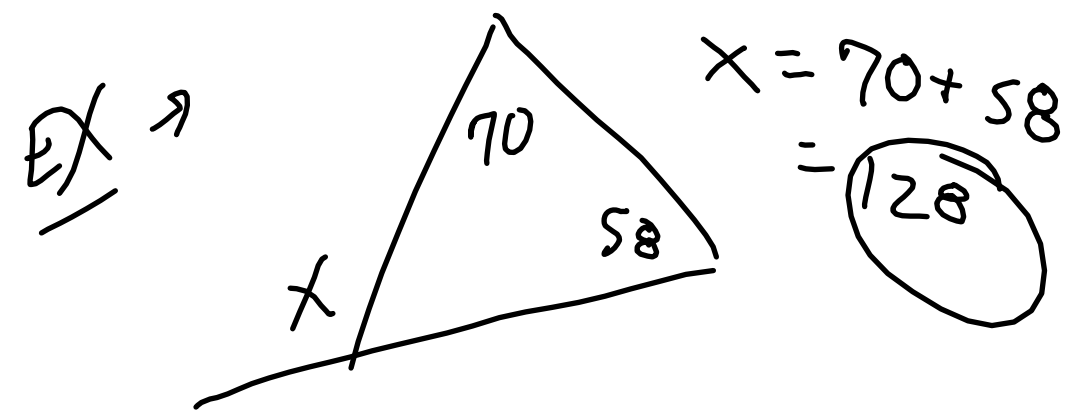


- Triangle Exterior  $\angle$  Theorem  $\Rightarrow$  exterior  $\angle$  is sum of remote interior  $\angle$ 's

Proof:



Given:  $\angle 4$  is exterior  $\angle$   
 Prove:  $m\angle 1 + m\angle 2 = m\angle 4$



S	R
① $\angle 4$ is exterior $\angle$	① Given
② $m\angle 1 + m\angle 2 + m\angle 3 = 180$	② $\Delta$ -Sum Thm.
③ $m\angle 3 + m\angle 4 = 180$	③ Def. Linear Pair
④ $m\angle 1 + m\angle 2 + m\angle 3 = m\angle 3 + m\angle 4$	④ Transitive Prop.
⑤ $m\angle 1 + m\angle 2 = m\angle 4$	⑤ Subtraction

HW: p. 175 → 9-21, 29-33, 45