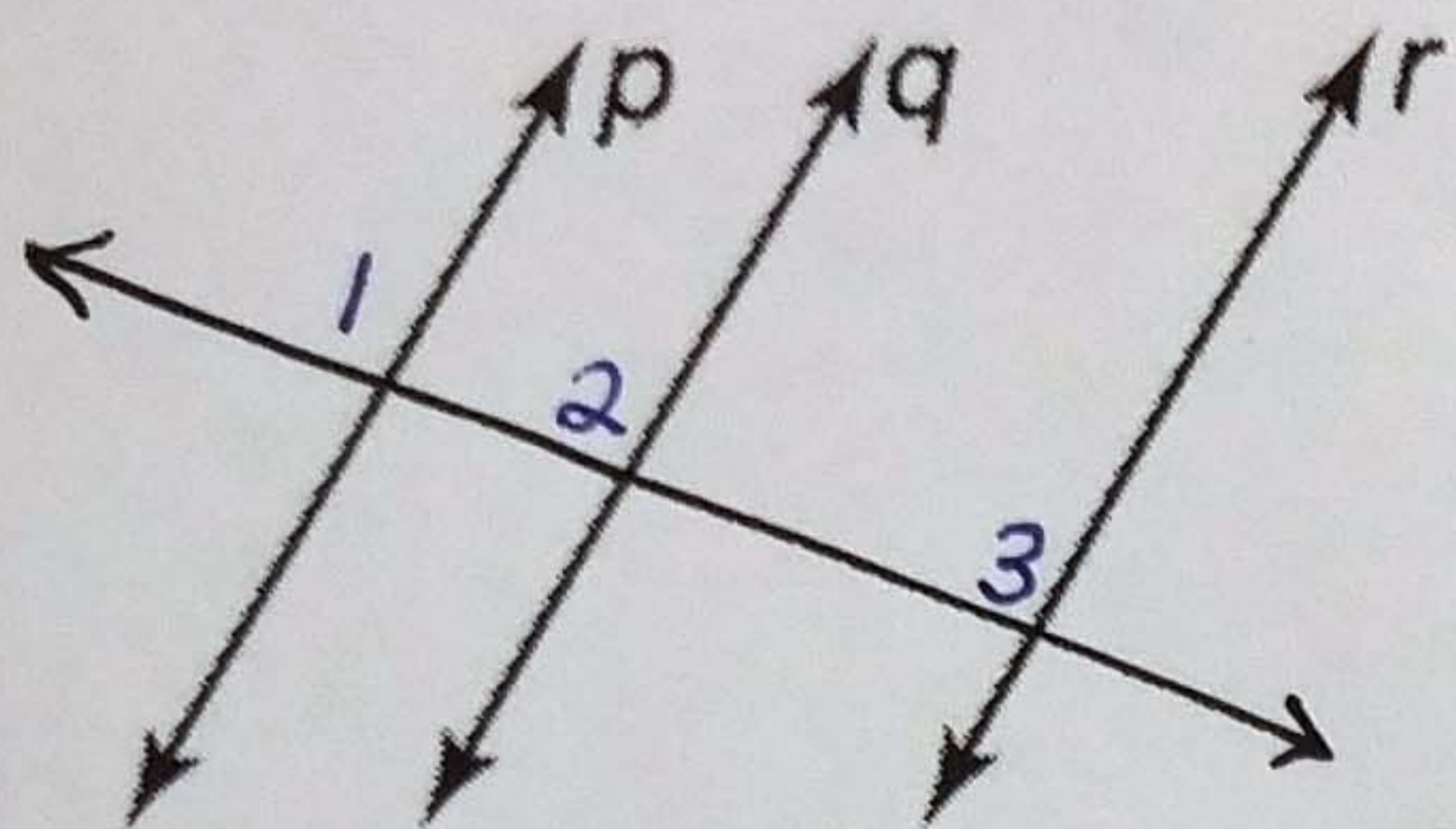
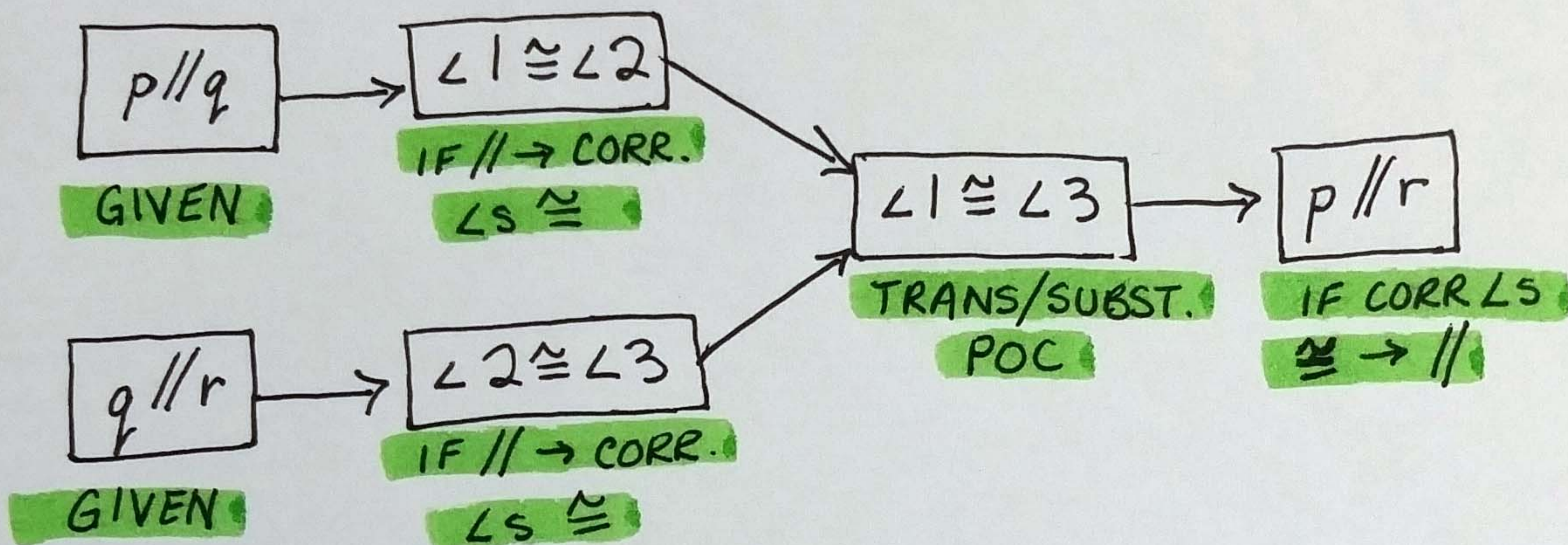


More about Parallel Lines

Transitive Property of Parallel Lines: If two lines are parallel to the same line, then they are parallel to each other.



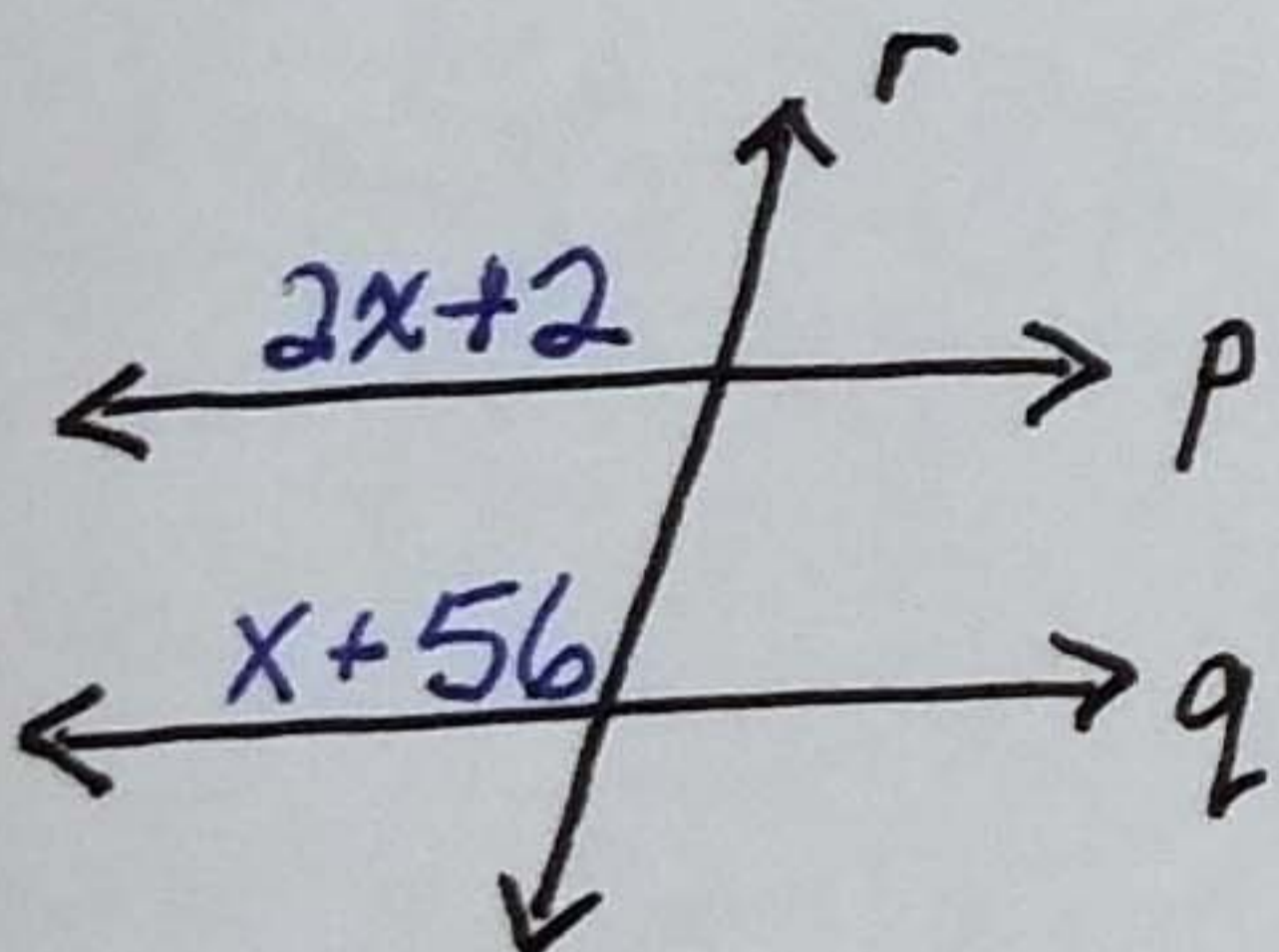
PROOF: **Given:** $p \parallel q$ and $q \parallel r$ **Prove:** $p \parallel r$



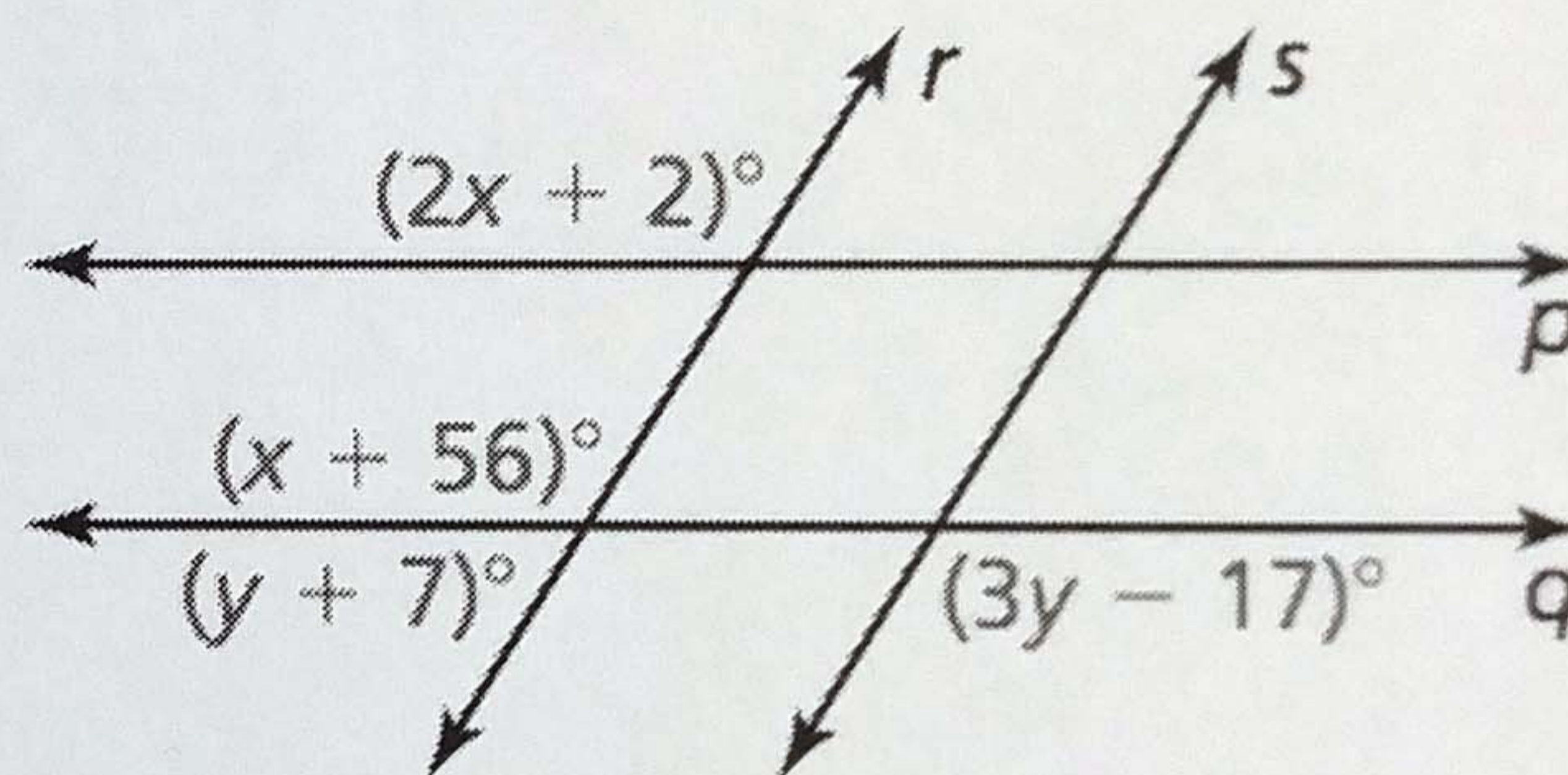
Examples:

Use the diagram for #1-3

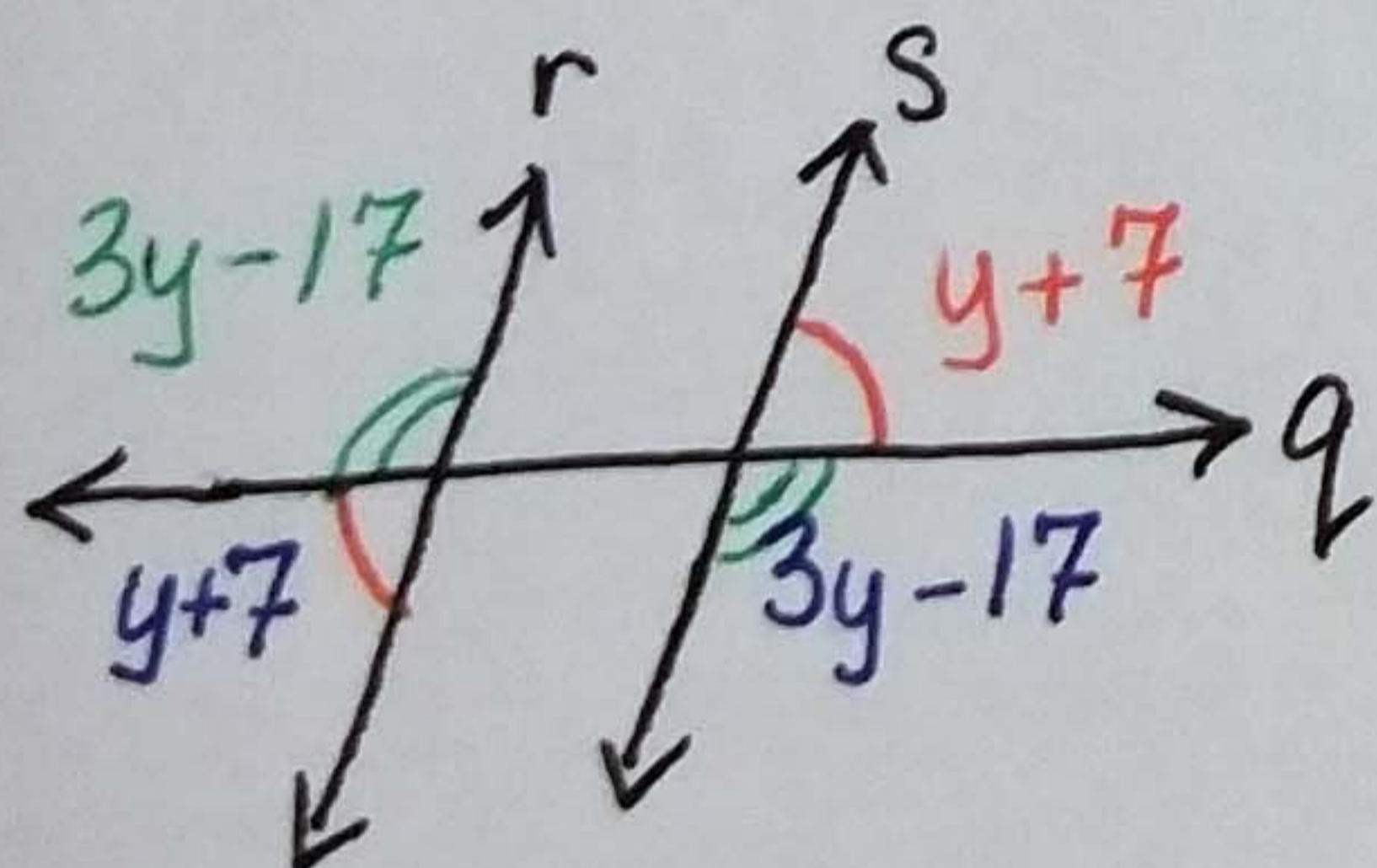
1. Find the value of x that makes $p \parallel q$



$$\begin{aligned} \text{CORR. } \angle s &\cong \\ 2x+2 &= x+56 \\ -x &\quad -x \\ \hline x+2 &= 56 \\ -2 &\quad -2 \\ \hline \boxed{x=54} & \end{aligned}$$



2. Find the value of y that makes $r \parallel s$

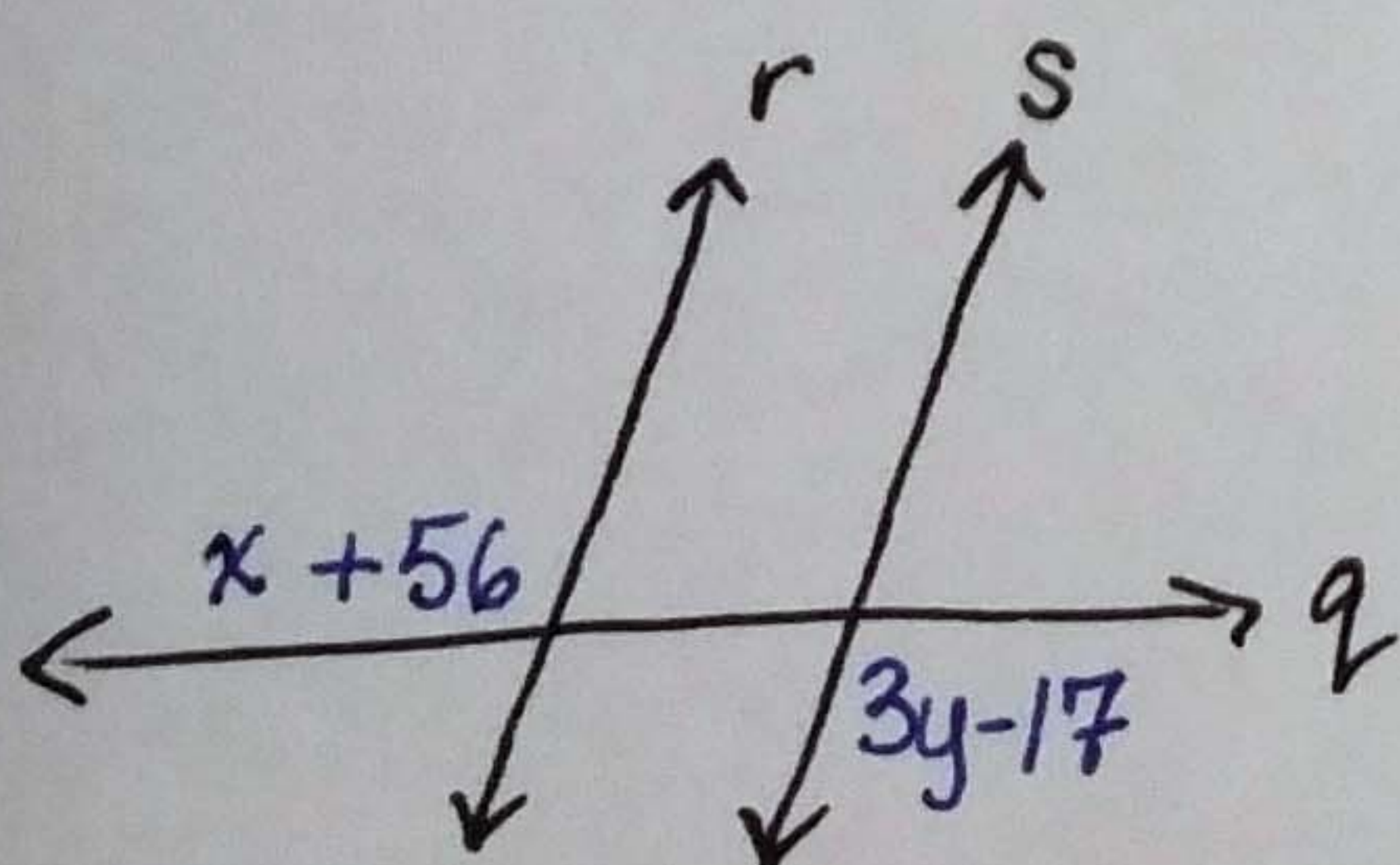


LINEAR PAIRS SUPPLEMENTARY

$$\begin{aligned} y+7 + 3y-17 &= 180 \\ 4y-10 &= 180 \\ +10 &\quad +10 \\ \hline 4y &= 190 \\ \frac{4y}{4} &= \frac{190}{4} \end{aligned}$$

$$\boxed{y=47.5}$$

3. Based on your findings from #1 and #2, can r be parallel to s and can p be parallel to q at the same time? Explain your reasoning.



$$\begin{aligned} \text{ALT. EXT. } \angle s &\cong \\ x+56 &\stackrel{?}{=} 3y-17 \\ 54+56 &\stackrel{?}{=} 3(47.5)-17 \\ 110 &\neq 125.5 \\ p \parallel q &\quad \text{NOT ON SAME DIAGRAM} \quad r \parallel s \end{aligned}$$

Use the diagram for #4.

4. Which rays are parallel? Explain your reasoning.

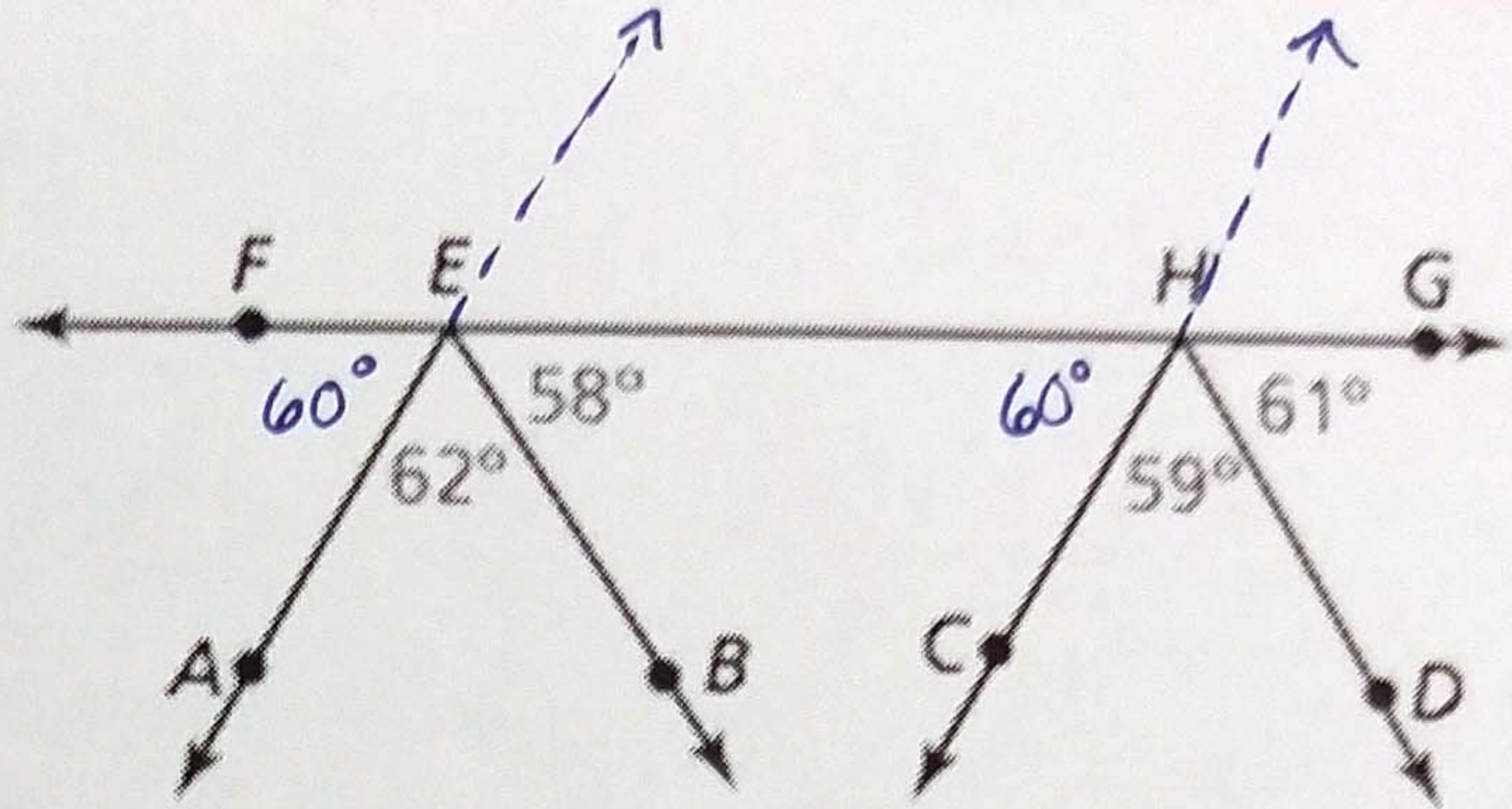
$$180 = m\angle FEA + 62 + 58$$

$$60^\circ = m\angle FEA$$

$$180 = m\angle EHC + 59 + 61$$

$$60^\circ = m\angle EHC$$

CORR. \angle s \cong
 $\overrightarrow{EA} \parallel \overrightarrow{HC}$



5. Write a flow chart proof yourself! When your group decides on a final draft, write it on the board.

Given $\angle 1$ and $\angle 3$ are supplementary.

Prove $m \parallel n$

